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THE UNITED KINGDOM VEHICLE APPROVAL AUTHORITY

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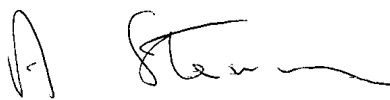
COMMUNICATION CONCERNING THE APPROVAL GRANTED OF A TYPE  
OF ELECTRICAL/ELECTRONIC SUB-ASSEMBLY <sup>(1)</sup> WITH REGARD TO  
REGULATION NO: 10 AS AMENDED BY THE 02 SERIES OF  
AMENDMENTS

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Approval No: 10R-035493

1. Make (trade name of manufacturer): Directed Electronics
2. Type and general commercial description(s): Avital 3001L (2009 SKU), 330V (427) and 514J Siren
3. Means of identification of type, if marked on the ~~vehicle/component~~/separate technical unit<sup>(1)</sup>  
Sticker on base of unit
  - 3.1 Location of that marking: On top of unit
4. Category of vehicle: Not applicable
5. Name and address of manufacturer:  
  
Directed Electronics  
1 Viper Way  
Vista, CA 92081  
United States of America
6. In the case of components and separate technical units, location and method of affixing of the ECE approval mark: Printed on sticker on top of unit
7. Address(es) of assembly plant(s):  
  
Nutek  
No.167, Lane 235  
BauChiau Road  
ShinDian City, Taipei County 231  
Taiwan



8. Additional information (where applicable): See Appendix
9. Technical service responsible for carrying out the tests: SGS UK Ltd
10. Date of test report: 2 March 2010
11. Number of test report: AUT130731/4/GH/10
12. Remarks (if any): See Appendix
13. Place: BRISTOL
14. Date: 25 MARCH 2010
15. Signature:  A. W. STENNING  
Head of Technical and Quality Group
16. The index to the information package lodged with the approval authority, which may be obtained on request is attached.
17. Reason for extension: Not applicable

**Appendix to Type Approval Communication Certificate No: 10R-035493  
concerning the type approval of an electrical/electronic sub-assembly under Regulation No: 10**

1. Additional information
  - 1.1. Electrical system rated voltage: 12V. ~~pos~~/neg ground<sup>(1)</sup>
  - 1.2 This ESA can be used on any vehicle type with the following restrictions: 12V. ~~pos~~/neg ground<sup>(1)</sup>
    - 1.2.1 Installation conditions, if any: Supplied with the Product
  - 1.3 This ESA can be used only on the following vehicle types: Not applicable
    - 1.3.1 Installation conditions, if any: Not applicable
  - 1.4 The specific test method(s) used and the frequency ranges covered to determine immunity were:  
(Please specify precise method used from Annex 9): 20 to 2000MHz at 30 V/m free field
  - 1.5 Approved/accredited laboratory (for the purpose of this Regulation) responsible for carrying out the test: SGS UK Ltd
2. Remarks: None

<sup>(1)</sup> Delete where inapplicable

**INFORMATION DOCUMENT**

**FOR TYPE-APPROVAL OF AN ELECTRIC/ELECTRONIC SUB-ASSEMBLY  
WITH RESPECT TO ELECTROMAGNETIC COMPATIBILITY**

1. Make (trade name of manufacturer): Directed Electronics
2. Type: Avital 3001L (2009 SKU), 330V (427) & 514J Siren
3. Means of Identification of type, if marked on the component/~~separate technical unit~~:  
Sticker on base of unit
- 3.1. Location of marking: On top of unit
4. Name and address of manufacturer:  
Directed Electronics  
1 Viper Way, Vista, CA 92081, USA.  
  
Name and address of authorized representative, if any:  
Carl Huntington  
120 Riverview Rd, Ewell, Epsom, Surrey, KT19 0JQ
5. In case of components and separate technical units, location and method of affixing  
of the approval mark: Printed on Sticker on top of unit
6. Address(es) of assembly plant(s):  
Nutek  
No.167, Lane 235, BauChiau Road, ShinDian City, Taipei County 231, Taiwan
7. This ESA shall be approved as a Component:
8. Any restrictions of use and conditions for fitting: See instructions with product
9. Electrical system rated voltage: V Pos/Neg Ground.12V

**Appendix 1.**

Description of the ESA chosen to represent the type (electronic block diagram and list of main components constituting the ESA (e.g. make and type of microprocessor, crystal etc.).

**Appendix 2.**

Relevant test report(s) supplied by the manufacturer from a test laboratory accredited to ISO 17025 and recognized by the Approval Authority for the purpose of drawing up the type approval certificate.





## **3001L Security System** installation guide

**Note:** This product is intended for installation by a professional installer only! Any attempt to install this product by any person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

*driven to excel*  
**Directed**  
E L E C T R O N I C S

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Bitwriter®, Code Hopping™, Doubleguard®, ESP™, FailSafe®, Ghost Switch™, Learn Routine™, Nite-Lite®, Nuisance Prevention® Circuitry, Revenger®, Silent Mode™, Soft Chirp®, Stinger®, Vehicle Recovery System®, VRS®, and Warn Away® are all Trademarks or Registered Trademarks of Directed Electronics.



The Bitwriter® (p/n 998U) requires chip version 2.5 or newer to program this unit.

Bitwriters with date code of 6A or older require an IC upgrade (p/n 998M). Some Bitwriters with a date code of 6B do not require the IC upgrade. Refer to Tech Tip # 1112 for more information. Bitwriter 2 compatible.

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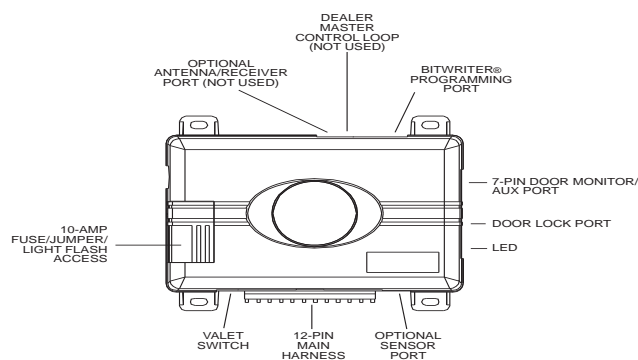
## What is new

- The shock sensor is pre-set, but can be fine-tuned with the Bitwriter (see page 34)

## What is included

- Control module
- 12-pin main harness
- 7-pin door monitor/Aux harness
- 4-pin sensor harness
- Valet switch and LED
- 3-pin door lock harness

## Control module



## Installation points to remember

This product represents many years of research and development. It is very sophisticated and should be installed by experienced security installers only. Please do not attempt installation of this product without reading this guide. The system has been designed to provide the ultimate in security, coupled with limitless convenience and expansion options.

Do not disconnect the battery if the vehicle has an anti-theft coded radio. If equipped with an airbag, avoid disconnecting the battery if possible.

**IMPORTANT!** Please read this entire installation guide before beginning the installation. The installation of this security system requires interfacing with many of the vehicle's systems. Many new vehicles use low-voltage or multiplexed systems which can be damaged by low resistance testing devices, such as test lights or logic probes. Test all circuits with a high-quality digital multi-meter before making the connections.

**IMPORTANT!** Many airbag systems will display a diagnostic code through their warning light after they lose power. Disconnecting the battery requires this code to be erased, a procedure that can require a trip to the dealer.s

### Before you begin the installation

- Check with the customer to determine the LED and Valet switch location.
- Remove the domelight fuse. This prevents accidentally draining the battery.
- Roll down a window to avoid being locked out of the car.

### After the install

- Test all functions. The "Using Your System" section of the Owner's Guide is very helpful when testing.
- When testing, don't forget that this system is equipped with Nuisance Prevention Circuitry. NPC™ can bypass both sensor zones, making them seem to stop working.
- Carefully reassemble the under-dash trim panels.
- Inspect the engine compartment for tools that may have been left behind.

### Tools required

This is a general list of tools required to complete the installation of this security system in most vehicles. Some vehicles may require additional tools.

- |                                |                               |
|--------------------------------|-------------------------------|
| • Digital multi-meter          | • Nutdriver and/or socket set |
| • Wire cutters/strippers       | • Panel removal tool          |
| • Solderless terminal crimpers | • Drill bit set               |
| • Cordless power drill driver  | • Phillips head screwdriver   |
| • Torx driver set              | • Work light                  |

## Deciding on component location

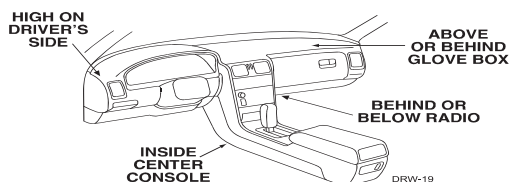
### Control module

Never put the control module in the engine compartment!

The first step in hot-wiring a vehicle is removing the driver's side underdash panel to access the starter and ignition wires. If the control module is placed just behind the driver's side dash it can easily be disconnected.

When locating the control module, try to find a secure location that will not require you to extend the harnesses' wires (they are 1.5 meters long). Keep it away from the heater core (or any other heat sources) and any obvious leaks.

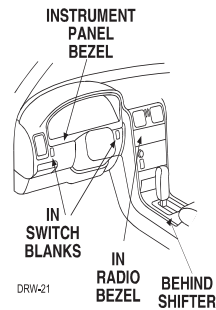
Some good control module locations: Above the glove box, inside the center console, above the underdash fuse box, behind or below the radio, etc.



## LED and Valet switch

Things to remember when positioning the LED and Valet switch:

- The LED should be visible from both sides and the rear of the vehicle, if possible.
- The LED and Valet switch should be at least 1-1/2" clearance to the rear.
- It is easiest to use a small removable panel, such as a switch blank or a dash bezel. Remove it before drilling your 5/16" hole.



**Important!** Do **Not** use a step drill bit (unibit) for drilling the 5/16" hole. It is recommended to use a 5/16" drill bit. Use care to ensure the hole is drilled straight. Drilling at an angle can cause product malfunction.

## Starter kill relay

If the Starter Kill Relay or it's connections are immediately visible upon removal of the underdash panel, they can easily be bypassed.

Always make the relay and its connections difficult to notice from the factory wiring. Exposed yellow butt connectors do not look like factory parts, and will not fool anyone. For this reason, routing the starter kill wires away from the steering column is recommended.

## Connecting your wires

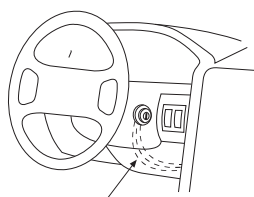
Now that you have decided where each component will be located, you're going to find the wires in the car that the security system will be connected to.

**Important!** Do not use a 12V test light or logic probe to find these wires! All testing described in this manual is described using a digital multimeter.

### Obtaining constant 12V

We recommend two possible sources for 12V constant: The (+) terminal of the battery, or the constant supply to the ignition switch. **Always install a fuse within 12 inches of this connection.**

**Important!** Do not remove the fuse holder on the red (H1/11) wire. It ensures that the control module has it's own fuse, of the proper value, regardless of how many accessories are added to the main power feed.



CONSTANT 12V DRW-23

### Finding the 12V switch ignition wire

The ignition wire is powered when the key is in the run or start position. This is because the ignition wire powers the ignition system (spark plugs, coil) as well as the fuel delivery system (fuel pump, fuel injection computer). Accessory wires, on the other hand, lose power when the key is in the start position to make more current available to the starter motor. Use the following procedure to find (+)12V with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the ignition wire. The steering column harness or ignition switch harness is an excellent place to find this wire.
4. Turn the ignition key switch to the run position. If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Now turn the key to the start position. The meter display should stay steady, not dropping by more than a few tenths of a volt. If it drops close to or all the way to zero, go back to step 3. If it stays steady at (+)12V, you have found an ignition wire.

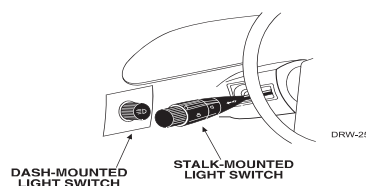
### Finding a parking light wire

The parking light wire is often found near the switch. Many cars have the switch built into the turn signal lever, and the parking light wire can be found in the steering column. The same wire is often available in the kick panel or running board.

To find the (+) and (-) parking light wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. To find a (+) circuit, attach (-) probe of the meter to ground. If you are looking for a (-) circuit, attach (+) probe of the meter to (+) 12V.
3. Probe the wire you suspect of being the parking light wire. The area near the headlight/parking light switch, or near the kick panel, is an excellent area to start.
4. Turn on the parking lights. If your meter shows (+)12V, turn off the parking lights and make sure it goes back to zero.
5. With the meter at zero, turn the parking lights On, and using the dash light dimmer control, turn the brightness of the dash lights up and down.

If the meter changes more than a volt when using the dimmer, look for another wire. If it stays relatively close to (+)12V, you have found your parking light wire.





## Finding the door pin switch circuit

The best places to find the door switch wire are:

**At the pin switch:** When testing at the pin switch, check the wire to ensure that it "sees" all the doors. Often, the passenger switch will cover all the doors even if the driver's switch will not.

**At the dome light:** This may not be your best choice if the vehicle has delayed domelight supervision, but it will work in vehicles with completely diode-isolated pin switches.

Often the door switch wires, described above, can also be found in the windshield pillars, running boards or kick plates.

Use the following procedure to find the door pin switch wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. In most cars, fasten the (+) probe of your meter to (+)12V constant.
3. Using meter, probe the wire you suspect of being the door trigger wire. If the meter reads (+)12V when any door is opened and the meter goes to 0 with the door closed, you have found a (-) trigger wire.
4. Fasten the (-) probe of your meter to ground and then using positive probe check for positive Door Trigger. If your meter displays 12V when the Door is opened and 0 when it is closed you have found the (+) door trigger.

**Important:** Make sure the wire you use "sees" all the doors - some newer vehicles lack standard-type pinswitches. The dome light in these vehicles is turned on when the door handle is lifted. There is usually a wire coming out of the door into the kick panel to provide a (-) trigger for all doors.

## Main harness wire connection guide

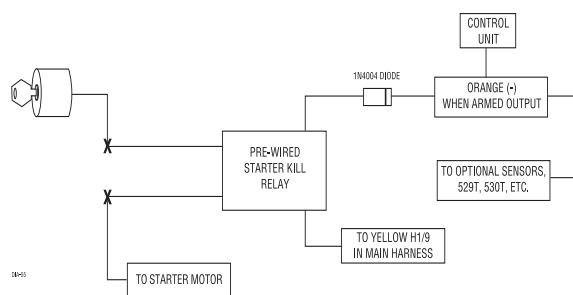
### Main harness wiring diagram

<b>H1/1</b>	ORANGE	(-)500mA Ground When Armed
<b>H1/2</b>	WHITE	(+)Default/(-) Light Flash Output
<b>H1/3</b>	WHITE/BLUE	No Function
<b>H1/4</b>	BLACK/WHITE	(-) 200mA Domelight Supervison Output
<b>H1/5</b>	GREEN	(-) Door Trigger Input
<b>H1/6</b>	BLUE	(-) Instant Trigger (Hood and Trunk Pin)
<b>H1/7</b>	VIOLET	(+) Door Trigger Input
<b>H1/8</b>	BLACK	(-) Chassis Ground Input
<b>H1/9</b>	YELLOW	(+)Ignition Input
<b>H1/10</b>	BROWN	(+)Siren Output
<b>H1/11</b>	RED	(+) 12V Constant Power Input
<b>H1/12</b>	RED/WHITE	(-)200mA Auxiliary Channel/Delayed Accessory Output

## Main harness wiring guide

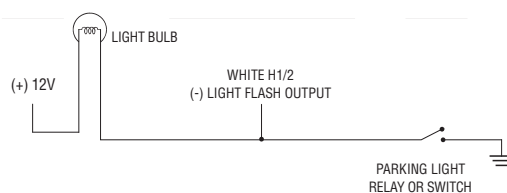
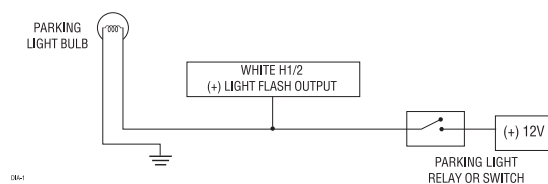
**H1/1 ORANGE (-) 500 mA ground-when-armed output:** This wire supplies a (-) ground as long as the system is armed. This output ceases as soon as the system is disarmed. This wire controls operation of the pre-wired starter kill relay and can be used to control other optional accessories.

**Note:** If connecting the orange wire to control another module, such as a 529T or 530T window controller, a 1 amp diode (type 1N4004) will be required. Insert the diode as shown below.



**Important!** Never interrupt any wire other than the starter wire.

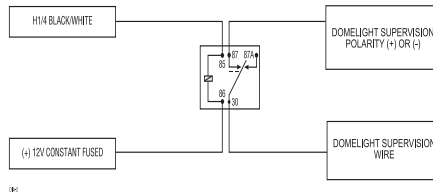
**H1/2 WHITE light flash output:** As shipped, this wire should be connected to the (+) parking light wire. It will supply a (+) 10A output. If the light flash polarity fuse jumper inside the unit is moved to the opposite position (see Internal Jumpers), this wire supplies a (-) 10A output. This is suitable for driving (-) parking light wires.



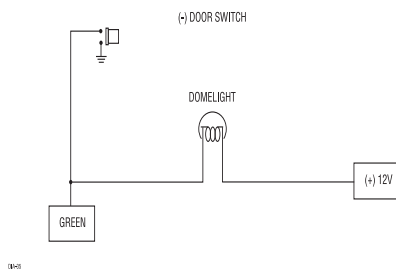
**H1/3 WHITE/BLUE no function.**

**H1/4 BLACK/WHITE (-) 200 mA domelight-supervision output:** Connect this wire to the (optional) domelight supervision relay. The standard system does not include this relay, it is an optional feature.

**Important!** This output is only intended to drive a relay. It cannot be connected directly to the domelight circuit, as the output cannot support the current draw of one or more bulbs.

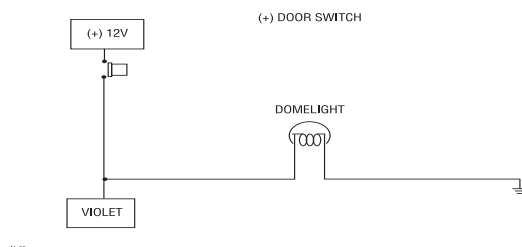


**H1/5 GREEN (-) door trigger input:** Most vehicles use negative door trigger circuits. Connect the green wire to a wire which shows ground when any door is opened. In vehicles with factory delays on the dome-light circuit, there is usually a wire that is unaffected by the delay circuitry.

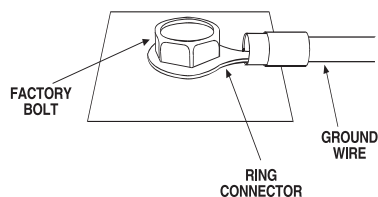


**H1/6 BLUE (-) instant trigger:** This input will respond to a negative input with an instant trigger. It is ideal for hood and trunk pins and will report on zone one.

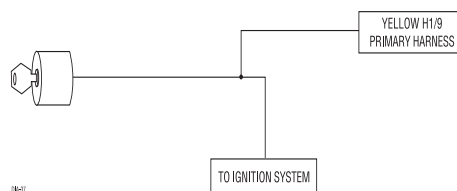
**H1/7 VIOLET (+) door trigger input:** This wire is used in vehicles that have a positive (+) switched dome light circuit . Connect the violet wire to a wire that shows (+)12V when any door is opened and ground, when the door is closed



**H1/8 BLACK (-) chassis ground connection:** We recommend that you do not use a factory ground. Ground all your components including the siren, to the same point in the vehicle, (preferably the kick panel). Scrape away any paint and use a factory bolt or make your own ground with a self-tapping screw and a star washer.



**H1/9 YELLOW (+) ignition input:** Connect this wire to the (+)12V ignition wire. This wire must show (+)12V with the key in Run position and during cranking. Take care to insure that this wire cannot be shorted to the vehicle chassis at any point.



**H1/10 BROWN (+) siren output:** Connect this to the RED wire of the siren. Connect the BLACK wire of the siren to (-) chassis ground, preferably at the same point as the control module's BLACK ground wire.

**H1/11 RED (+)12V constant power input:** Before connecting this wire, remove the supplied fuse. Connect to the battery positive terminal or the constant 12V supply to the ignition switch.

Always use a fuse within 12 inches of the point you obtain (+)12V. Do not use the 15A fuse in the harness for this purpose. This fuse protects the module itself.

**H1/12 RED/WHITE (-) 200mA auxiliary channel/delayed accessory output:** If programmed for an auxiliary output, this wire will provide a (-) pulse when the lock button on the factory transmitter is pressed twice within three seconds. This output can be used to control optional accessories. If programmed for delayed accessory output, this wire will pro-

vide (-) ground when the ignition is turned off and will continue to output (-) ground until a door is opened then closed. This can be used to energize the accessory circuit in the vehicle to keep the radio and other accessories on after the ignition is turned off.

**Important!** Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply (-) 200 mA, and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.

Sensors and other triggers can be bypassed if this output is used to open the vehicle trunk while the alarm is armed. See H2/5 Gray zone shunting for programming and connection descriptions.

## Auxiliary harness wire connection guide

### Auxiliary harness wiring diagram

H2/1	BROWN	(-) Horn Honk Output
H2/2	GREEN	Arm Input
H2/3	RED	Disarm Defeat Input
H2/4	BLUE	Disarm Input
H2/5	GRAY	(+) Trunk Release/Sensor Shunt Input
H2/6	VIOLET/BLACK	No Function
H2/7	YELLOW/BLACK	Light Flash Monitor Input



## Auxiliary harness wiring guide

**H2/1 BROWN (-) horn honk output:** This wire supplies a 200 mA (-) output that can be used to honk the vehicle's horn. It provides a pulsed output when the security system is armed/disarmed and in the triggered sequence or in panic mode. In most vehicle's with (-) horn circuits this wire can control the vehicle's horn without adding a relay. If the vehicle has a (+) horn circuit, an optional relay must be used to interface with the vehicle's horn circuit.

**Important!** Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply (-) 200 mA, and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.

**H2/2 GREEN for arm input:** Connect this GREEN wire to a wire that changes state when the doors are locked using the factory keyless entry transmitter. This wire can accept a positive (+) or negative (-) input. The vehicle's power door lock motor wire is ideal.

**H2/3 RED disarm defeat input:** This wire is used to prevent the interior door lock switches from disarming the system. To determine the best location to interface this wire, first test the operation of the remote keyless entry system.

When unlocking the doors with the factory remote transmitter, does the driver's door unlock first? Most vehicles operate this way. If this is the case connect the RED wire to the passenger unlock motor wire. When testing this wire, it should show 12V (+) ONLY when the unlock button on the factory transmitter is pressed a second time to unlock the passenger doors. If the factory keyless entry system unlocks all of the doors at the same time, it is recommended that the H2/7 YELLOW/BLACK wire

be used for disarm defeat input. The H2/3 wire connection is not required if using H2/7 YELLOW/BLACK as a disarm defeat wire.

**H2/4 BLUE disarm input:** Connect the BLUE wire to a wire that changes state when the doors are unlocked using the factory keyless entry transmitter. If the factory transmitter unlocks the driver's door first, the BLUE wire must be connected to the wire that changes state when the driver's door is unlocked by itself. In this case, find the driver's door unlock motor wire. In most vehicle's this wire can be found in the driver's kick panel.

**H2/5 GRAY trunk release/sensor shunt input:** This input is used to bypass the sensor inputs when the trunk is opened using the factory keyless entry system or trunk release relay while armed. When the system receives a (+) input on this wire, zones 1, 2 and 4 are bypassed for 3-seconds. If during that 3-seconds, ground is applied to the H1/6 BLUE wire then the alarm zones are bypassed (See Feature menu 1/8) and will remain bypassed until the ground input is removed. This means that when the trunk is open with the factory transmitter the only triggers that remain active while the trunk is open are the doors and ignition. 3-seconds after the trunk is closed the bypassed zones again become active.

**H2/6 VIOLET/BLACK no function.**

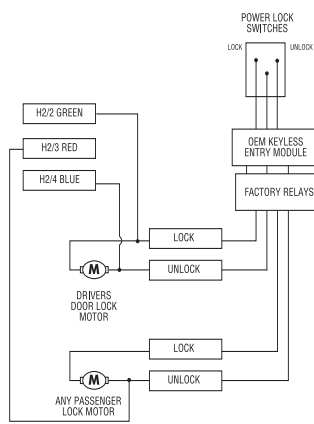
**H2/7 YELLOW/BLACK light flash monitor input:** This input monitors the factory system light flash output and can be used as a disarm defeat wire. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc - depending on the vehicle type and manufacturer. The yellow/black wire can accept a (+) positive or (-) negative input and should be used when the factory keyless entry does not provide drivers priority unlock.

### Keyless entry systems—two types

There are two main types of keyless entry systems. Systems that unlock the driver's door first and Systems that unlock all doors at the same time.

drivers priority unlock

To test for this type of system unlock the door, by using the factory remote. If the factory remote only unlocks the drivers door on the first press of unlock use the following diagram.

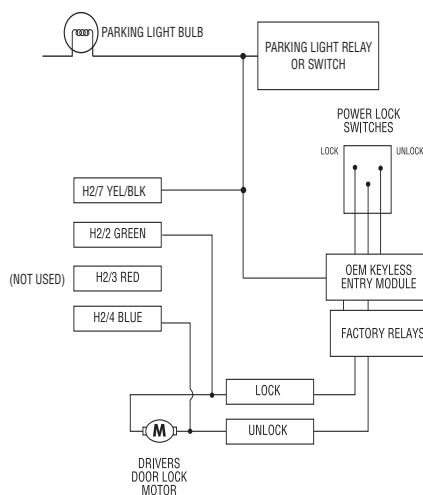


**Note:** It is often easy to access the passenger unlock wire going to the rear door motor on the driver's side.

### No priority—driver's door unlock

This type of keyless entry system is common in import vehicles as well as many Jeep vehicles. When unlocking the doors with the transmitter all doors unlock at the same time. It is recommended to use H2/7 YEL-LOW/BLACK wire for Disarm Defeat instead of the H2/3 RED wire. This input wire monitors the factory system light flash output. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc., depending on the vehicle type and manufacturer. Do NOT connect this wire to the domelight. This wire can accept a (+) positive or (-) negative input.

For installation, please refer to the diagram below.



## Door lock harness wire connection guide

These door lock outputs are for Passive arming control of the factory door locks. They can also be used to control the door locks with the ignition switch for vehicles that do not have this feature in the factory RKE system.

<b>H3/A</b>	GREEN (-) Lock, (+) Unlock Output
<b>H3/B</b>	Not Used
<b>H3/C</b>	BLUE (-)Unlock, (+) Lock Output

The control module can control 2 common power door lock types without any additional parts. With certain vehicles, or if an actuator is to be installed, either a 451M Door Lock Relay Satellite or two relays will be required. See [www.directechs.com](http://www.directechs.com) for TechTips document 1041.

## Plug-in harnesses

### LED and Valet switch

The LED and Valet switch should be accessible from the driver's seat. The Valet switch plugs into the blue port on the side of the unit. Check for rear clearance before drilling a 5/16-inch hole and mounting the switch. The LED switch operates at 2V DC and plugs into the white port on the side of the unit. Make sure the LED wires are not shorted to ground, this will damage the LED.

### Data port—Bitwriter®

The black three-pin port can be used for programming the unit using the Directed Bitwriter, a hand held programming tool. The Bitwriter also allows programming of features that are not available in the feature menus.

## Four-pin optional sensor harness

### RED wire

The red wire supplies constant power to the optional sensor.

### BLACK wire

The black wire supplies ground to the optional sensor.

### BLUE, GREEN wires

The blue and green wires are multiplex inputs. They are both tied to the same zone. If an input of less than 0.8 seconds is supplied to either wire the Warn-Away® response will occur. An input longer than 0.8 seconds to either wire will initiate the triggered sequence and report zone 4. This port can be used for optional sensors such as: the 506T—glass break-age sensor, or the 508D—field disturbance sensor.

## Door lock learn routine

Before the unit will respond to the factory remote keyless system, it must learn the polarity of the door lock wires. To learn the lock polarity:

It is important that all the INPUT signals to the control module are in the rest status state (no activity) before entering the learn routine.

### To learn lock:

Make sure the doors, hood and trunk are closed so the factory system operates as it would when the user is using it.

1. With all the doors, hood and trunk closed: Plug in all harnesses (12 pin harness plugs in last )
2. Within 5-seconds: Press and hold the Valet switch. The LED flashes once.
3. Immediately press the lock button on the OEM transmitter. The LED will flash once confirming the lock was successfully learned then will light up solid.

### To learn unlock:

4. Within 3-seconds: Press and release the Valet switch once then press and hold. The LED will flash twice.
5. Immediately press the unlock button on the OEM transmitter.
6. The LED will flash twice then light up solid confirming the unlock was successfully learned.
7. Release the Valet switch.
8. Cycle the ignition switch to exit programming.

If the lock/unlock learn was unsuccessful, unplug the 12 pin harness for 15 seconds and re-attempt procedure.

The systems learn routine will only be active for ten seconds after power up. If locks are not successfully learned unplug main 12 pin harness for 15 seconds and re-attempt.

#### To exit the learn routine:

You can do ONE of the following:

- Turn the ignition on.
- Wait for 15 seconds.
- Press the Valet switch too many times.



## On-board dual stage shock sensor

There is a dual-stage shock sensor inside the control module. Adjustments are made via programming routine indicated below. Since the shock sensor does not work well when mounted firmly to metal, we recommend against screwing down the control module. The full trigger of the onboard shock sensor reports zone 2. See Table of Zones.

When adjusting the sensor, it must be in the same mounting location after the install is completed. Adjusting the sensor and then relocating the module requires readjustment.

The system must be disarmed. Doors and other protected entries must be closed, and the ignition Off.

### To enter Shock Adjustment Mode:

**Note:** Door locks must be learned prior to entering shock sensor adjustment mode.

Start with the system disarmed, and sit in the driver's seat. Make sure you have the OEM remote and the ignition key.

1. Turn the ignition key switch on, then off, three times in three seconds: On, off, on, off, on, off.
2. The siren/horn sounds three short chirps or honks. The Status LED will blink to indicate the current setting.
3. The adjustment mode lasts for 20 seconds. If no adjustments are made, the system exits the adjustment mode 20 seconds later. To extend the time, press the Valet Switch (see note below).
4. To increase sensitivity, press the Unlock button on the OEM remote. To decrease sensitivity, press the Lock button.

When the sensitivity increases, two quick, short chirps/honks are heard. Decreased sensitivity is indicated by one quick chirp.

If maximum or minimum settings are reached, a long chirp/honk is added.

You can test the adjustment setting by striking the outside of the vehicle with varied force levels to trigger the system. The siren chirps to confirm that the system will trigger at that setting.

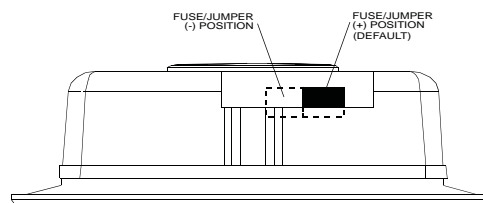
5. To exit the adjustment mode, turn on the key. Four quick, short beeps are heard. Then the Status LED will indicate the sensitivity level.

After impact sensor learn routine has been exited, the LED will confirm the current impact sensor setting.

**Important:** Horn honks apply only if the horn wire is connected.

## Internal polarity jumper

A 10A fuse is used as both a fuse and a polarity jumper. This jumper determines the light flash output polarity. In the (+) position (default), the on-board relay is enabled and the unit will output (+)12V on the WHITE wire, H1/2. In the (-) position, the on-board relay is enabled for (-) output on the WHITE wire, H1/2. To access the jumper, remove the sliding door from on top of the control module, as shown below.



## Zones

Zone	Trigger Type	Input Description
1	Instant trigger	Hood and/or trunk pin switches.
2	Multiplexed input	Heavy impact from on-board Doubleguard® shock sensor.
3	Two-stage, progresses from warning to full alarm	Door switch circuit.
4	Multiplexed	Optional sensor, Inputs shorter than 0.8 seconds will trigger Warn Away® response, while inputs longer than 0.8 seconds will instantly trigger full alarm.
5	Two-stage (similar to zone 3)	Ignition input.

**Note:** The Warn Away® response does not report on the LED.

## Long term event history

The control module will store the last 2 triggers in memory that are not erased when the ignition is turned on. This can be helpful for trouble shooting false alarm reports. To access the event history use the following procedure.

1. With the ignition switch in the off position press and hold the Valet switch.
2. While holding the Valet switch turn the ignition On.
3. Release the Valet switch.
4. Within 5-seconds, press and release the Valet switch.

The LED will flash in groups indicating the last two zones triggered. For example, if zone 2 and 3 were the last two zones to be triggered, the LED will flash two times followed by a pause and then flash three times followed by a pause.

**Note:** The Warn Away® response does not report on the LED.

The Long Term Event History will exit if the ignition is turned off or there is no activity for 60-seconds.

## Rapid resume logic

The current state of the alarm will be stored in non-volatile memory. If power is lost and then reconnected, the system will recall the stored state from memory (arm, disarm, and Valet mode).

## Feature programming

The feature programming routine is used to access and change any of the feature settings in the two menus below. The feature settings can be accessed and changed by using one of the following:

- The Valet switch to enter the feature programming routine.
- Use of the Directed Electronics Bitwriter® is recommended. Expanded programming options are only available when using the Directed Electronics Bitwriter®.

**Note:** If Feature Programming Lockout is set to ON, all features will be locked and can **ONLY** be accessed by using a Bitwriter®.

### To enter feature programming routine

1. Open a door.
2. Turn the ignition on and then off.
3. Close the door.
4. Within 5-seconds, press and HOLD the Valet switch. After 3-seconds the siren/horn will sound once to indicate entry into feature menu 1. To select the second features menu, continue to hold the Valet switch until the siren/horn sounds twice. Once the desired menu is selected, release the Valet switch.

5. Within 5-seconds, press and release the Valet switch the number of times corresponding to the desired feature listed below. Then press the Valet switch one more time and **hold**. The siren/horn will sound the number of times equal to the feature number selected.

6. While holding the Valet switch, assign the selected feature to a factory button.

Press Lock for 1 short siren chirp/horn honk, or press Unlock for 2 short siren chirps/horn honks.

**Important:** Horn honks apply only if the horn wire is connected.

### Once a feature is programmed

- Other features can be programmed.
- Other feature menu can be selected.
- Learn Routine can be exited.

### Accessing additional features

- Release, then press and release the Valet switch the number of times to advance from the feature just programmed to the next feature desired.
- Press and **hold** the Valet switch once more.
- The siren chirps/horn honks to confirm the feature selected.

## Accessing feature menu 2

- Release, then press and hold the Valet switch.
- After 3-seconds, the unit will advance to the next menu and the siren/horn will sound 2 times to indicate feature menu 2 has been entered.

## Exiting feature programming

You can do ONE of the following:

- Turn the ignition On.
- No activity for 15-seconds.
- Press and release the Valet switch too many times.

**Important:** Horn honks apply only if the horn wire is connected.

**Bitwriter® ONLY features**

Due to memory limitations for this system, the following features can only be programmed using Directed's Bitwriter® programmer. Factory default settings are shown in **bold** (left column).

<b>B-1</b>	<b>Shock Sensor Adjustment - programmable 0-16</b>	
<b>B-2</b>	<b>Siren duration - 0 to 180 seconds</b>	
<b>B-3</b>	<b>Channel 3* Validity</b>	Latched/Latched reset w/ign/latch 30 second timed/2nd unlock/ delayed acc.
<b>B-4</b>	<b>Forced passive arming ON</b>	Forced passive arming OFF
<b>B-5</b>	<b>NPC ON</b>	NPC OFF
<b>B-6</b>	<b>Panic with ignition OFF</b>	Panic with ignition ON
<b>B-7</b>	<b>Dealer security features OFF</b>	Dealer security features ON
<b>B-8</b>	<b>Transmitter programming UNLOCKED</b>	Transmitter programming LOCKED
<b>B-9</b>	<b>Feature programming UNLOCKED</b>	Feature programming LOCKED

\*Feature only available if using optional antenna and non-OEM remote.



## Feature menu 1

Factory default settings are shown in **bold**.

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
1	<b>Active arming</b>	Passive arming
2	<b>Chirps ON</b>	Chirps OFF
3	<b>Door Trigger Error Chirp ON</b>	Door Trigger Error Chirp OFF
4	<b>Ignition-Controlled Domelight ON</b>	Ignition-Controlled Domelight OFF
5	Panic Enabled (OEM upgrade)	<b>Auxiliary Output Enabled (OEM upgrade)</b>
6	<b>Auxiliary Output</b>	Delayed Accessory Output
7	<b>Delayed Door Trigger</b>	Instant Door Trigger
8	<b>Sensor shunt zones 1, 2 &amp; 4</b>	All zones
9	<b>Siren Duration-30 seconds</b>	Siren Duration-60 seconds
10	<b>Valet switch input: 1-pulse</b>	Valet switch input: 2-5 pulses
11	<b>Horn pulse honk duration 0.020 seconds (does not affect full trigger pulse duration)</b>	0.030, 0.040, 0.050 seconds

Feature steps 5 and 6 are related. Only if Auxiliary Output Enabled is selected in step 5 can either Auxiliary Output or Delayed Accessory Output be selected in step 6. Examples of this are where Auxiliary Output is used to provide a momentary 800mSec pulse on the RED/WHITE wire of the main harness. It may be used for opening the trunk. (continued on next page.)

The delayed accessory output allows selected vehicle accessories to remain on (such as radio) when the ignition is turned off. This output is active for 1 hour until a door is opened and closed - or the system is armed using the factory remote transmitter.

## Feature menu 2

Factory default settings are shown in **bold**.

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
1	<b>Ignition-Controlled Locking ON</b>	Ignition-Controlled Locking OFF
2	<b>Ignition-Controlled UnLocking ON</b>	Ignition-Controlled Unlocking OFF
3	<b>Active Locking</b>	Passive Locking
4	<b>Door Lock Pulse Duration-0.8 sec.</b>	Door Lock Pulse Duration-3.5 sec.
5	<b>Single Unlock Pulse</b>	Double Unlock Pulse
6*	<b>Channel 3: Validity</b>	Channel 3: Second Unlock
7	<b>Code Hopping ON*</b>	Code Hopping OFF

\*Feature only available if using optional antenna and non-OEM remote.

## Troubleshooting

### Starter kill does not work:

- Is the correct starter wire being interrupted? If the car starts when the starter kill relay is completely disconnected, the wrong starter wire has been cut and interrupted.
- Is the yellow wire connected to "true" ignition? Make sure this wire is connected to a wire that has power in the run and start positions.
- The starter kill goes active 1 minute after arming the alarm. Make sure you wait that time period before attempting to test.

### The Valet switch does not work.

- Is it plugged into the correct socket? See the Valet Switch section of this guide.
- Is the H1/9 YELLOW wire properly connected? See Primary Harness (H1) Wire Connection Guide section of this guide.
- If the mounting of the switch is a tight fit it can cause the switch not to work properly. Make sure the hole size is drilled with a 5/16 drill bit.

### Status LED does not work.

- Is the LED plugged into the small white port on the side of the control unit? See LED and Valet Switch section of this guide.

### **Passive or Ignition controlled door locks operate backwards.**

- This unit has easily-reversed lock/unlock outputs. Recheck Door lock harness outputs (H3) section, to see if you have reversed these.

### **The siren chirps/horn honks when the unit enters panic mode, but the confirmation chirps/honks do not work when locking and unlocking.**

- Are the confirmation chirps/honks turned on in programming? See Feature Programming section.
- Is the unit in Valet mode.
- Is the horn pulse duration long enough? Some cars require a longer pulse on the horn wire for it to honk. (see features programming menu 1-11).

### **I can get into programming and change the feature settings, but when I use the remote the settings seem to change.**

- Are you using a binary, master dealer remote? Remember, you can program the settings using a master dealer remote. However, the unit will follow the dealer default settings when using a binary remote to operate the system.

### **Door Lock Learn Routine does not learn door locks.**

- Check connections to be sure everything is properly connected. Refer to the *Keyless Entry Systems - Two Types* section of this guide.
- Check the *Door Lock Learn Routine* section of this guide to ensure the correct procedure is being used.

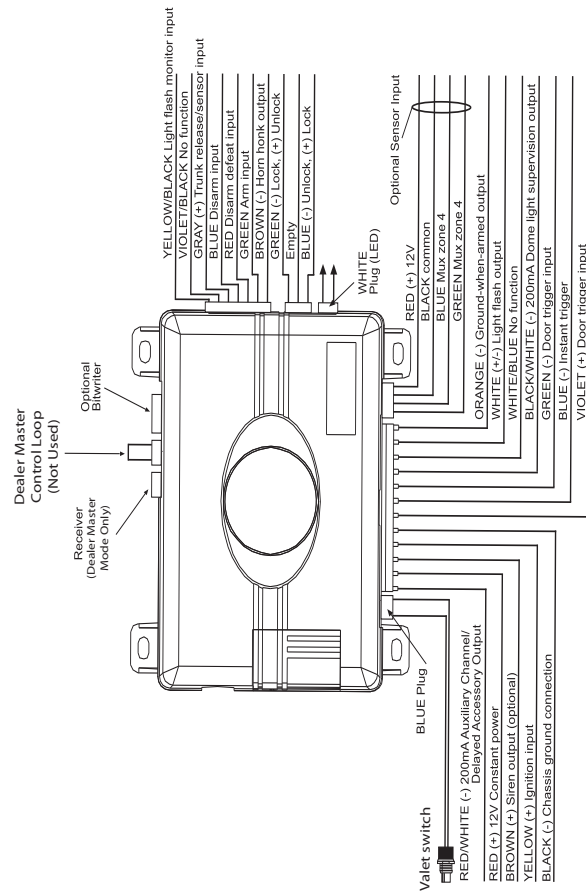
**Door Lock Learn Routine does not work, the unit enters the learn routine then chirps/honks and exits.**

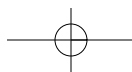
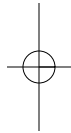
- Some cars do not lock the doors when the door is open. For these vehicles, to program the unit correctly the door needs to be closed.

**Unit goes into Programming every time the ignition is turned off.**

- The Valet switch is probably stuck in the down position. If the hole for the switch is too tight, the travel of the switch can be impaired and the switch may stick in the down position. To allow the button to travel freely, the mounting hole must not be too tight.

## Wiring quick reference guide





The company behind this system is Directed Electronics

Since its inception, Directed Electronics has had one purpose, to provide consumers with the finest vehicle security and car stereo products and accessories available. The recipient of nearly 100 patents and Innovations Awards in the field of advanced electronic technology.

Directed is ISO 9001 registered.

Quality Directed Electronics products are sold and serviced throughout North America and around the world.

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Vista, CA 92081

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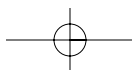
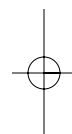
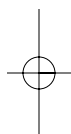


# Model 330V

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## *Owner's Guide*





## *limited lifetime consumer warranty*

Directed Electronics, Inc. promises to the original purchaser to repair or replace with a comparable reconditioned model any Directed Electronics, Inc. unit (hereafter the "unit"), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories, which proves to be defective in workmanship or material under reasonable use during the lifetime of the vehicle provided the following conditions are met: the unit was professionally installed and serviced by an authorized Directed Electronics dealer; the unit will be professionally reinstalled in the vehicle in which it was originally installed by an authorized Directed Electronics dealer; and the unit is returned to Directed Electronics, Inc., shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number and address; the authorized dealers name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. All components other than the unit, including without limitation the siren, the remote transmitters and the associated sensors and accessories, carry a one-year warranty from the date of purchase of the same. This warranty is non-transferable and is automatically void if: the original purchaser has not completed the warranty card and mailed it within ten (10) days of the date of purchase to the address listed on the card; the unit's date code or serial number is defaced, missing or altered; the unit has been modified or used in a manner contrary to its intended purpose; the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in materials or construction. The warranty does not cover damage to the unit caused by installation or removal of the unit. Directed Electronics, Inc., in its sole discretion, will determine what constitutes excessive damage and may refuse the return of any unit with excessive damage. TO THE MAXIMUM EXTENT ALLOWED BY LAW, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED ELECTRONICS, INC. NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED ELECTRONICS, INC. DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. DIRECTED ELECTRONICS, INC. SECURITY SYSTEMS, INCLUDING THIS UNIT, ARE DETERRENTS AGAINST POSSIBLE THEFT. DIRECTED ELECTRONICS, INC. IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS; AND HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE



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Make sure you have all of the following information from your dealer:

A clear copy of the sales receipt, showing the following:

- Date of purchase
- Your full name and address
- Authorized dealer's company name and address
- Type of alarm installed
- Year, make, model and color of the automobile
- Automobile license number
- Vehicle identification number
- All security options installed on automobile
- Installation receipts



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1



## what is included

- Control module and harness
- A Stinger® dual stage shock sensor (on-board the control module)
- Pre-wired Valet® switch and status LED
- Failsafe® Starter Kill relay (if equipped)

## important information

Congratulations on the purchase of your security system. Due to the complexity of this system, it must be installed by an authorized dealer only. Installation of this product by anyone other than an authorized dealer voids the warranty. All dealers are provided with a preprinted dealer certificate to verify that they are authorized.

By carefully reading this Owner's Guide prior to using your system, you will maximize the use of this system and its features.

You can print additional or replacement copies of this manual by accessing the Directed web site at [www.directed.com](http://www.directed.com).



## using your system

### manual (active) arming

The factory default is active arming. In this mode you can activate, or arm, the system by locking the doors with your factory keyless entry transmitter. When the system arms, you will hear a short horn honk and see the parking lights flash once. While the system is armed, the status LED will flash about twice a second, showing that the system is actively protecting your vehicle. If you hear a second short horn honk after arming, and see the status LED flashing in groups, see Diagnostics section. This extra short horn honk is called Bypass Notification.

**note:** If the ignition is turned on within 60 seconds of arming the system, the system will automatically disarm.

### automatic (passive) arming

The system also can be programmed to arm itself automatically (called passive arming). If the system is programmed for passive arming, it will automatically arm 30 seconds after the ignition is turned off and the system "sees" you leave the vehicle by opening and closing a door. Whenever the system is in its 30-second passive-arming countdown, the status LED will flash twice as fast as it does when the system is armed. When the system arms, you will hear a short horn honk and the parking lights will flash once. The doors lock (if connected and programmed for passive locking).

**note:** Passive arming may qualify for a higher insurance discount. Check with your insurance agent

**note:** If any protected entry point (such as a door or a switch-protected trunk or hood) is open, the system will not passively arm. Additionally, each time a sensor is triggered during the arming countdown, the 30-second countdown starts over.

### armed protection

When armed, your vehicle is protected as follows:

- Light impacts to your vehicle will trigger the warn away signal. The system will pulse the horn and flash the parking lights for a few seconds.
- Heavy impacts will trigger the system. The triggered sequence is 30 or 60 seconds of constant horn honking and flashing parking lights.
- If a door is opened, the system will immediately start pulsing the horn and flashing the parking lights. Three seconds later, the horn output changes to a continuous blast. This progressive response gives you time to disarm the system with your transmitter if you inadvertently open the door while the system is armed, while still providing instant response (even if the door is immediately closed).

**note:** If programmed for instant trigger, the horn will output full trigger response after the door has been opened (see Programming Options)

- Turning on the ignition key triggers the same progressive response as opening a door.
- If equipped, the starter interrupt prevents the vehicle's starter from cranking.

**note:** The vehicle may already be equipped with a starter kill relay from the factory.



## disarming

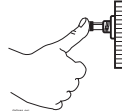
To disarm the system, unlock the doors using your factory keyless transmitter. The horn will sound twice, and the parking lights will flash twice. If the horn sounds either four or five times when disarming, refer to the Diagnostics section of this guide. This is called Tamper Alert.

## disarming without a transmitter

This feature allows you to override the system without the transmitter should it be lost, damaged or disabled. To do this, you must have the vehicle's ignition key and know where the Valet® switch is located.



Turn the ignition to the "run" position. Press and release the Valet® switch, within 10 seconds. After a few seconds the LED will stop flashing and the vehicle



should start. If it does not, you may have waited too long. Turn the ignition off and try again.

**note:** The setting for the number of times the Valet® switch must be pressed is set in the Programming Section of this guide.

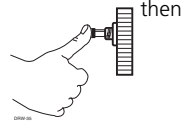
## valet® mode

You can prevent your system from arming, by using Valet® Mode. This is very useful when washing the vehicle or having it serviced. In Valet® Mode, the system will not arm, even with the transmitter, but all convenience functions (door locks, trunk release, etc.) will work normally.

### To enter or exit Valet® Mode with the Valet® switch:



Turn ignition to "on" position, turn to "off" position. Press and release the Valet® switch within 10 seconds. The status



then

LED will light steady if you have entered Valet® Mode. To exit Valet® Mode, repeat the steps above. The LED will turn off when exiting Valet® Mode.

### remote valet®

Remote Valet® is a convenient feature that makes bypassing the security system easier. This feature makes it possible to exit or enter Valet® Mode using your factory keyless transmitter.

1. Open any door.
2. Press LOCK on the transmitter.
3. Press UNLOCK on the transmitter.
4. Press LOCK on the transmitter.

The status LED will stay on if you have entered Valet® Mode, and it will go out if you exited Valet® Mode.

**note:** The remote Valet® feature will not work with all factory keyless entry systems. Some keyless entry systems do not work with a door open.

### panic mode

If you are threatened in or near your vehicle, you can attract attention by triggering the system with your transmitter! If your factory keyless transmitter does not have a panic button, this system can be programmed to enable a panic feature (refer to the Programming Options).

If enabled, just press the lock button on your factory keyless transmitter twice within three seconds to enter Panic Mode. The horn will sound and the parking lights will flash for 30 seconds. To stop Panic Mode at any time, press the unlock button on your factory transmitter.

***note:** The system can also be programmed so that pressing the lock button twice within three seconds will activate an optional accessory. If the unit is programmed to activate an optional accessory, Panic Mode will not be operational.*

## nuisance prevention circuitry®

Your system has Nuisance Prevention Circuitry® (NPC®). This circuitry prevents annoying repetitive trigger sequences due to faulty door pin switches or environmental conditions such as thunder, jackhammers, airport noise, etc.

### Here's how it works:

The alarm triggers three times. Each time, the same sensor or switch is triggering the alarm. The three triggers are within 60 minutes of each other. Your system will interpret this pattern of triggers as false alarms. After the third trigger, your system ignores, or bypasses, that sensor or switch (along with any other sensors or switches sharing the same zone) for 60 minutes.

If the bypassed sensor tries to trigger the system while it is being bypassed, the 60-minute bypass period will start over. This ensures that a sensor that is continuously triggering will remain bypassed.

Doors are covered differently: If the alarm is triggered by an open door for three full cycles (one-and-one-half minutes), the doors will be bypassed until the trigger ceases.

**note:** Arming and disarming the system does not reset this function! The only ways to reset a bypassed zone are for it to not trigger for 60 minutes or to turn on the ignition. If testing your system, it is important to remember that this circuitry can cause zones to be bypassed and appear to stop working. If five chirps are heard when disarming, false alarm protection has engaged. If you wish to clear the memory, turn the ignition key on.



## diagnostics

The microprocessor at the heart of your system is constantly monitoring all of the switches and sensors connected to it. It detects any faulty switches and sensors and prevents them from disabling the entire system. The microprocessor will also record and report any triggers that occurred during your absence.

### arming diagnostics

If the system is armed with an input active (door open, sensor triggering, etc.) the unit will chirp once when arming and then one more time a few seconds later. This is called bypass notification.

**note:** Bypass notification will not occur if chirps have been programmed OFF.

The system will ignore the input that was active when it was armed until it goes away. Three seconds later it will monitor that input normally. For example, if your car has interior light exit delay, and you arm the system before the interior light goes out, you may get bypass notification. Once the light goes out, however, the doors are monitored normally.

### disarming diagnostics

Extra disarm chirps are the tamper alert. If four chirps are heard when disarming, the system was triggered in your absence. If five chirps are heard, a zone was triggered so many times that false alarm prevention circuitry has bypassed that zone. In either case, the status LED will indicate which zone was involved (see Table of Zones section). The system will retain this information in its memory, and chirp four or five times

each time it is disarmed, until the next time the ignition key is turned on.

### table of zones

The zone number is the number of LED flashes used by the system to identify that input. The standard input assignments are listed below.

<b>ZONE</b> (Number LED Flashes)	<b>DESCRIPTION</b>
<b>1</b>	Instant trigger - often used for hood/trunk pin switches
<b>2</b>	Instant trigger - a heavier impact detected by the shock sensor
<b>3</b>	Door switch trigger
<b>4</b>	Optional sensor
<b>5</b>	Ignition trigger

The LED will not report if the Warn Away response is triggered.

### rapid resume logic

This system will store its current state to non-volatile memory. If power is lost and then reconnected the system will recall the stored state from memory. This means if the unit is in Valet® Mode and the battery is disconnected for any reason, such as servicing the car, when the battery is reconnected the unit will still be in Valet® Mode. This applies to all states of the system including arm, disarm, and Valet® Mode.

## programming options

Programming options control your system's normal, operational set-up. Most options do not require additional parts, but some may require installation labor.

### programming settings

The following is a list of the program settings:

*note: Factory default setting is shown in **bold**.*

*note: Settings 6 and 11 are to be set by the installer.*

1. **Active** or passive arming (automatic arming 30-seconds after closing the last door).
2. Arming/disarming confirmation chirps **on** or off.
3. Door Trigger Error Chirp **on** or off.
4. Ignition-controlled domelight **on** or off.
5. **Panic**/Auxiliary Channel: This unit has the ability to control an optional accessory by pressing the door lock button twice. If the auxiliary feature is activated and optional accessories are not installed, the system will not respond to pressing the lock button twice. In **panic** mode pressing the lock button twice will activate panic mode.
6. **Auxiliary Output** or Delayed Auxiliary Output (Installer only).
7. Door Trigger **delayed** or instant: In the **delayed** configuration the unit will provide a progressive response if the door is opened while the system is armed. The system will chirp and

the parking lights will flash for a few seconds followed by a full trigger response when the door is opened. In the instant mode, the system will trigger the full trigger response.

8. Sensor shunt zones **2** and **4** or All zones.
9. Siren duration - **30** seconds or 60 seconds.

***note:** The siren is optional and requires additional installation.*

10. Valet® Pulse Count: The number of pulses of the Valet® switch required to disarm the security system are programmable from one to five pulses. The default setting is **one pulse**.
11. Horn pulse chirp duration (Installer only).



## glossary of terms

**Control Module:** The “brain” of your system. Usually hidden underneath the dash area of the vehicle. It houses the microprocessor which monitors your vehicle and controls all of the alarm’s functions.

**Failsafe® Starter Kill** (if equipped): An automatic switch controlled by the security system which prevents the vehicle’s starter from cranking whenever the system is armed. The vehicle is never prevented from cranking when the system is disarmed, in Valet® Mode, or should the starter kill switch itself fail. Your system is ready for this feature, however installation of this feature may require additional labor.

**Input:** Any physical connection to the security system. An input can be provided through a sensor, pinswitch or by existing systems in the vehicle, such as ignition or courtesy lights.

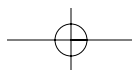
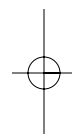
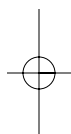
**LED:** The LED indicates the status of your system. It is also used to report triggers and faults in the system or sensors.

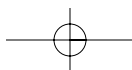
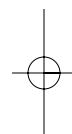
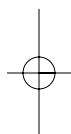
**Valet® Switch:** A small push-button switch mounted somewhere in the vehicle. The switch is used to override the alarm when a transmitter is lost or damaged, or to put it into Valet® Mode. This switch is also used to program optional features.

**Warn Away® Response:** Light impacts to the vehicle generate the Warn Away® Response, which consists of several seconds of horn honks and flashing parking lights.

**Zone:** A zone is a separate input that the alarm can recognize as unique. Each input to the system is connected to a particular zone. Often, two or more inputs may share the same zone.

[illegible]





## QUICK REFERENCE GUIDE:

### To arm the system

- You can arm the system by locking the doors with your factory keyless entry transmitter. When the system arms, you will hear a short horn honk, and see the parking lights flash once.

### To disarm the system

- To disarm the system, unlock the doors using your factory keyless transmitter. You will hear two horn honks, and the parking lights will flash twice.

### Disarming without a transmitter

- Turn on the ignition. Press the Valet® switch the programmed number of times within 10 seconds. The system should now disarm. If it does not, you may have waited too long. Turn the ignition off and on and try again.

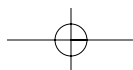
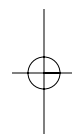
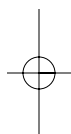
### To enter or exit Valet® Mode

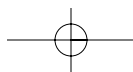
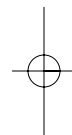
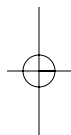
- Turn ignition to "run" position, then turn to "off" position. Press and release the Valet® switch within 10 seconds. The status LED will light solid if you are entering Valet® Mode, and it will go out if you are exiting Valet® Mode.

### Remote Valet®

- Open any door. Press the lock button on your transmitter. Within one second, press the unlock button on your transmitter. Within one second, press the lock button on your transmitter again. The status LED will stay on if you have entered Valet® Mode, and it will go out when exiting Valet® Mode.

Cut along dotted line and fold for a quick and easy reference to keep in your purse or wallet.





The company behind this system is Directed Electronics, Inc.

Since its inception, Directed Electronics has had one purpose, to provide consumers with the finest vehicle security and car stereo products and accessories available. The recipient of nearly 100 patents and Innovations Awards in the field of advanced electronic technology, DIRECTED is ISO 9001 registered.

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Directed Electronics is committed to delivering world class quality products and services that excite and delight our customers.



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Directed Electronics, registered in the ISO-9001 quality standard, is America's Favorite Security Company, with more than 50 patents and Innovations Awards. Directed Electronics engineers are committed to offering consumers the most technologically sophisticated electronic systems available today.

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Directed is committed to delivering on time, the best products we know how to provide, and to constantly work with our customers and vendors to improve our products, quality, delivery and customer friendly features.

[ OWNER'S GUIDE ]

M O D E L

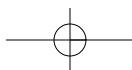
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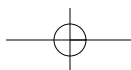
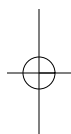
[ Vehicle Security System ]



Avital 3001L

***Owner's Guide***





## Limited consumer warranty

For a period of one calendar year from the date of purchase of this auto-security device, Directed Electronics, (Directed) promises to the ORIGINAL PURCHASER to repair or replace (at Directed's election) with a comparable reconditioned model, any Directed unit (hereafter the "unit"), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories which proves to be defective in workmanship or material under reasonable use, provided the following conditions (herein "Conditions") are met: the unit was purchased from an authorized Directed dealer; the unit was professionally installed and serviced by an authorized Directed dealer; the unit will be professionally reinstalled in the vehicle in which it was originally installed by an authorized Directed dealer; and the unit is returned to Directed, shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number and address; the authorized dealer's name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. ALL UNITS RECEIVED BY DIRECTED FOR WARRANTY REPAIR WITHOUT PROOF OF PURCHASE WILL BE DENIED.

After the first calendar year, from the date of purchase of the unit, Directed, promises to the ORIGINAL PURCHASER to repair or replace, (at Directed's sole and absolute discretion) with a comparable reconditioned model any unit which proves to be defective in workmanship or material under reasonable use FOR A CHARGE OF \$45.00, SO LONG AS THE AFOREMENTIONED CONDITIONS HAVE BEEN MET. The unit must be returned to Directed, postage pre-paid, along with a legible copy of the receipt (including the information below) and a cashier's check or money order made payable to Directed Electronics in the amount of \$45.00. This warranty is non-transferable and is automatically void if the unit has been modified or used in a manner contrary to its intended purpose, or if the unit has been damaged by accident, unreasonable use, neglect, improper service or other causes not arising out of defects in materials or construction. This warranty does not cover damage to the unit caused by installation or removal of the unit. This warranty does not cover labor costs for the removal, diagnosis, troubleshooting or reinstallation of the unit. For service on an out-of-warranty product a flat rate fee by model is charged. Contact your authorized dealer to obtain the service charge for your unit. These security systems are a deterrent against possible theft. Directed is not offering a guarantee or insuring against vandalism, damage or theft of the automobile or its parts or contents and Directed hereby disclaims any liability whatsoever, including without limitation, liability for damage, vandalism and/or theft of the vehicle, parts and/or its contents. Directed neither assumes nor authorizes any person or entity to assume for it any duty, obligation or liability in connection with its products. Directed disclaims and has absolutely no liability for any and all acts of third parties, including its authorized dealers or installers. In the event of a claim or a dispute involving Directed or its subsidiary, the venue shall be in San Diego, California. California state laws and applicable federal law shall apply and govern the dispute. TO THE MAXIMUM EXTENT ALLOWED BY



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**IMPORTANT NOTE:** This product warranty is automatically void if its date code or serial number is defaced, missing, or altered. This warranty will not be valid unless you have completed the warranty card and mailed it to Directed, within 10 days after purchase to the address listed on the warranty registration card. Make sure you have all of the following information from your authorized Directed dealer:

A clear copy of the sales receipt, showing the following:

- o Date of purchase
- o Your full name and address
- o Authorized dealer's company name and address
- o Type of system installed
- o Year, make, model and color of the automobile
- o Automobile license number
- o Vehicle identification number
- o All security options installed on automobile 920-0004 06-06



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## What is included

- Control module and harness
- A Stinger® dual stage shock sensor (on-board the control module)
- Pre-wired Valet switch
- Status LED
- Failsafe® Starter Kill relay (if equipped)

## Important information

Congratulations on the purchase of your security system. Due to the complexity of this system, it must be installed by an authorized dealer only. Installation of this product by anyone other than an authorized dealer voids the warranty. All dealers are provided with a preprinted dealer certificate to verify that they are authorized.

By carefully reading this Owner's Guide prior to using your system, you will maximize the use of this system and its features.

You can print additional or replacement copies of this manual by accessing the Directed web site at **[www.avital.com](http://www.avital.com)**



## Using your system

### Manual (active) arming

The factory default is active arming. You can activate or arm the system by locking the doors with your factory keyless entry transmitter. When the system arms, you will hear a short siren chirp and see the parking lights flash once.

**Note:** The system can be programmed to sound horn honks or siren chirps. The horn is optional and may require additional labor.

While the system is armed the status LED flashes about twice a second, to show that the system is actively protecting your vehicle. If you hear a second short siren chirp after arming, and the status LED is flashing in groups, then go to Diagnostics section (page 9). This extra short siren chirp is called Bypass Notification.

**Note:** If the ignition is turned on within 60 seconds of arming the system, the system will automatically disarm.

### Automatic (passive) arming

The system also can be programmed to arm itself automatically (called passive arming). If the system is programmed for passive arming, it will automatically arm 30 seconds after the ignition is turned off and the system "sees" you leave the vehicle by opening and closing a door. Whenever the system is in its 30-second passive-arming countdown, the status LED will flash twice as fast as it does when the system is armed. When the system arms, you will hear a short siren chirp and the parking lights will flash once. The doors lock (if connected and programmed for passive locking).



If any protected entry point (such as a door or a switch-protected trunk or hood) is open, the system will not passively arm. Additionally, each time a sensor is triggered during the arming countdown, the 30-second countdown starts over.

**Note:** Passive arming may qualify for a higher insurance discount. Check with your insurance agent

### Armed protection

When armed, your vehicle is protected as follows:

- Light impacts to your vehicle trigger the warn away signal. The system chirps the siren and flashes the parking lights for a few seconds.
- Heavy impacts trigger the system. The triggered sequence is 30 or 60 seconds of the siren sounding continuously and flashing parking lights.
- If a door is opened the system immediately starts short chirps of the siren and flashes the parking lights. Three seconds later the siren output changes to a continuous blast. This progressive response gives you time to disarm the system with your transmitter while providing instant response if you inadvertently open a door while the system is armed. (even if the door is immediately closed).

**Note:** If programmed for instant trigger, the siren sounds a full trigger response after the door has been opened (see *Programming Options* section of this guide)

- Turning on the ignition key triggers the same progressive response as opening a door.
- If the starter kill relay is installed, the starter interrupt prevents the vehicle's starter from cranking.

## Disarming

To disarm the system, unlock the doors using your factory keyless transmitter. The siren sounds twice, and the parking lights flash twice. If the siren sounds either four or five times when disarming, refer to the Diagnostics section of this guide. This is called Tamper Alert.

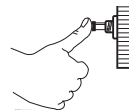
### Disarming without a transmitter

This feature allows you to override the system without the transmitter should it be lost, damaged or disabled. To do this, you must have the vehicle's ignition key and know where the Valet switch is located.



Turn the ignition to the "run" position.

**Press and Release** the Valet switch, within 10 seconds.



After a few seconds the LED will stop flashing and the vehicle should start. If it does not, you may have waited too long. Turn the ignition off and try again.

**Note:** Your installer can program the number of times to **Press** and **Release** the Valet Switch. See *Programming Options* section of this guide.

## Valet mode

You can prevent your system from arming, by using Valet Mode. This is very useful when washing the vehicle or having it serviced. In Valet Mode the system will not arm, but all convenience functions (door locks, trunk release, etc.) will work normally.

### To enter or exit Valet® Mode with the Valet switch:



Turn ignition to "on" position, then turn to "off" position. Press and release the Valet switch within 10 seconds. The



status LED will light steady if you have entered Valet Mode. To exit Valet Mode, repeat the steps above. The LED turns off when exiting Valet Mode.

## Remote valet

Remote Valet is a convenient feature that makes bypassing the security system easier. This feature makes it possible to exit or enter Valet Mode using your factory keyless transmitter.

1. Open any door.
2. Press LOCK on the transmitter.
3. Press UNLOCK on the transmitter.
4. Press LOCK on the transmitter.

The status LED will stay on if you have entered Valet Mode, and it will go out if you exited Valet Mode.

The remote Valet feature will not work with all factory Keyless system. Some keyless entry systems do not work with a door open.

## Panic mode

If you are threatened in or near your vehicle, you can attract attention by triggering the system with your transmitter! If your factory keyless transmitter does not have a panic button, this system can be programmed by your installer to enable a panic feature (refer to the Programming Options).

If enabled, just press the lock button on your factory keyless transmitter twice within three seconds to enter Panic Mode. The siren sounds and the parking lights flash for 30 seconds. To stop Panic Mode at any time, press the unlock button on your factory transmitter.

**Note:** The system can also be programmed so that pressing the lock button twice within three seconds will activate an optional accessory. If the unit is programmed to activate an optional accessory, Panic Mode will not be operational.

## Nuisance prevention circuitry®

Your system has Nuisance Prevention Circuitry (NPC). This circuitry prevents annoying repetitive trigger sequences due to faulty door pin switches or environmental conditions such as thunder, jackhammers, airport noise, etc.

### Here's how it works:

The alarm triggers three times. Each time, the same sensor or switch is triggering the alarm. The three triggers are within 60 minutes of each other. Your system will interpret this pattern of triggers as false alarms. After the third trigger, your system ignores, or bypasses that sensor or switch (along with any other sensors or switches sharing the same zone) for 60 minutes.

If the bypassed sensor tries to trigger the system while it is being bypassed, the 60-minute bypass period will start over. This ensures that a sensor that is continuously triggering will remain bypassed.

Doors are covered differently: If the alarm is triggered by an open door for three full cycles (one-and-one-half minutes), the doors will be bypassed until the door is closed.

**Important:** Arming and disarming the system does not reset the bypass feature. The bypass zone is reset by not triggering for 60 minutes or by turning the ignition On. When testing your system remember the bypass circuitry can cause zones to appear to stop working. If five chirps are heard when disarming, NPC has engaged. If you wish to clear the memory, turn the ignition key on.

## Diagnostics

The microprocessor at the heart of your system is constantly monitoring the switches and sensors connected to it. It detects any faulty switches and sensors and prevents them from disabling the entire system. The microprocessor also records and reports any triggers that occurred during your absence.

### Arming diagnostics

If the system is armed with an input active (door open, sensor triggering, etc.) the unit will chirp once when arming and then one more time a few seconds later. This is called bypass notification.

**Note:** Bypass notification will not occur if chirps have been programmed OFF.

The system will ignore the input that was active when it was armed until the input is no longer active. Three seconds later it will monitor that input normally. For example, if your car has interior light exit delay, and you arm the system before the interior light goes out, you may get bypass notification. Once the light goes out, however, the doors are monitored normally.

### Disarming diagnostics

Extra disarm chirps are the tamper alert. If four chirps are heard when disarming, the system was triggered in your absence. If five chirps are heard, a zone was triggered so many times that NPC has bypassed that zone. In either case, the status LED will indicate which zone was involved (see Table of Zones section). The system will retain this information in its memory, and chirp four or five times each time it is disarmed, until the next time the ignition key is turned on.

### Table of zones

The number of LED flashes the system uses to identify inputs is represented by a Zone. The standard Input assignments for zones are described below.

Zone/LED Flashes	Input description
1	Instant trigger - often used for hood/trunk pin switches
2	Instant trigger - a heavier impact detected by the shock sensor
3	Door switch trigger
4	Optional sensor
5	Ignition trigger

The LED will not report if the Warn Away response is triggered.

### Rapid resume logic

This system will store its current state to non-volatile memory. If power is lost and then reconnected the system will recall the stored state from memory. This means if the unit is in Valet Mode and the battery is disconnected for any reason, such as servicing the car, when the battery is reconnected the unit will still be in Valet Mode. This applies to all states of the system including arm, disarm, and Valet Mode.

## Programming options

Programming options control your system's normal, operational set-up. Most options do not require additional parts, but some may require additional labor. All programming options must be set by your installer.

### Programming settings

The following is a list of the program settings that can be set by your installer.

**Note:** Factory default setting is shown in **bold**.

1. **Active** or passive arming (automatic arming 30-seconds after closing the last door).
2. Arming/disarming confirmation chirps **on** or off.
3. Door Trigger Error Chirp **on** or off.
4. Ignition-controlled domelight **on** or off.
5. **Panic/Auxiliary Channel:** This unit has the ability to control an optional accessory by pressing the door lock button twice. If the auxiliary feature is activated and optional accessories are not installed, the system will not respond to pressing the lock button twice. In panic mode pressing the lock button twice will activate panic mode.
6. **Auxiliary Output** or Delayed Auxiliary Output.



7. Door Trigger **delayed** or instant: In the **delayed** configuration the unit will provide a progressive response if the door is opened while the system is armed. The system will chirp and the parking lights will flash for a few seconds followed by a full trigger response when the door is opened. In the instant mode, the system will trigger the full trigger response.
8. Sensor shunt zones **2** and **4** or All zones.
9. Siren duration - **30** seconds or 60 seconds.
10. Valet Pulse Count: The number of pulses of the Valet switch required to disarm the security system are programmable from one to five pulses. The default setting is **one pulse**.
11. Horn pulse duration.

**Note:** The horn is optional and may require additional labor.



## Glossary of terms

**Control Module:** The “brain” of your system. Usually hidden underneath the dash area of the vehicle. It houses the microprocessor which monitors your vehicle and controls all of the alarm’s functions.

**Failsafe® Starter Kill** (if equipped): An automatic switch controlled by the security system which prevents the vehicle’s starter from cranking whenever the system is armed. The vehicle is never prevented from cranking when the system is disarmed, in Valet® Mode, or should the starter kill switch itself fail. Your system is ready for this feature, however installation of this feature may require additional labor.

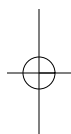
**Input:** Any physical connection to the security system. An input can be provided through a sensor, pinswitch or by existing systems in the vehicle, such as ignition or courtesy lights.

**LED:** The LED indicates the status of your system. It is also used to report triggers and faults in the system or sensors.

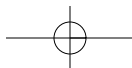
**Valet Switch:** A small push-button switch mounted somewhere in the vehicle. The switch is used to override the alarm when a transmitter is lost or damaged, or to put it into Valet Mode.

**Warn Away Response:** Light impacts to the vehicle generate the Warn Away Response, which consists of several seconds of siren chirps and flashing parking lights.

**Zone:** A zone is a separate input that the alarm can recognize as unique. Each input to the system is connected to a particular zone. Often, two or more inputs may share the same zone such as hood and trunk if connected.



[illegible]

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## ✂ QUICK REFERENCE GUIDE

Cut along dotted line and fold for a quick and easy reference to keep in your purse or wallet.

### To arm the system

- You can arm the system by locking the doors with your factory keyless entry transmitter. When the system arms, you will hear a short siren chirp, and see the parking lights flash once.

### To disarm the system

- To disarm the system, unlock the doors using your factory keyless transmitter. You will hear two siren chirps, and the parking lights will flash twice. If the siren chirps more than twice when disarming, your system may have triggered while you were away. See Table of Zones information on back.

### Disarming without a transmitter

- Turn on the ignition. **Press** and **Release** the Valet switch the programmed number of times within 10 seconds. Default is 1. Possible settings are from 1 to 5. The system should now disarm. If it does not, you may have waited too long. Turn the ignition off and on and try again.

### To enter or exit Valet Mode

- Turn ignition to "run" position, then turn to "off" position. **Press** and **Release** the Valet switch within 10 seconds. The status LED will light solid if you are entering Valet Mode, and it will go out if you are exiting Valet Mode.

**Note:** System must be disarmed to enter Valet mode.

### Remote Valet®

- Open any door. **Press** the lock button on your transmitter. Within one second, **Press** the unlock button on your transmitter. Within one second, **Press** the lock button on your transmitter again. The status LED will stay on if you have entered Valet Mode, and it will go out when exiting Valet Mode.

Table of Zones

Zone/LED Flashes	Input description
1	Instant trigger - often used for hood/trunk pin switches
2	Instant trigger - a heavier impact detected by the shock sensor
3	Door switch trigger
4	Optional sensor
5	Ignition trigger

The LED will not report if the Warn Away response is triggered.

Cut along dotted line and fold for a quick and easy reference to keep in your purse or wallet.





The company behind this system is Directed Electronics.

Since its inception, Directed Electronics has had one purpose, to provide consumers with the finest vehicle security and car stereo products and accessories available. The recipient of nearly 100 patents and Innovations Awards in the field of advanced electronic technology, DIRECTED is ISO 9001 registered.

Quality Directed Electronics products are sold and serviced throughout North America and around the world.

Call **(800) 274-0200** for more information about our products and services.



Directed Electronics is committed to delivering world class quality products and services that excite and delight our customers.



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Vista, CA 92081  
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# ***VIPER***®

## Model 330V

### Installation Guide

*driven to excel*  
***Directed***  
ELECTRONICS, INC.

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The Bitwriter® (p/n 998T) requires chip version 2.0 or newer to program this unit.

**NOTE:** This product is intended for installation by a professional installer only! Any attempt to install this product by any person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

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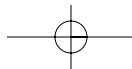
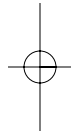
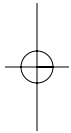
**DirectFax 800-999-1329 Technical Support 800-753-0800**

These resources are for authorized Directed Dealer use only.



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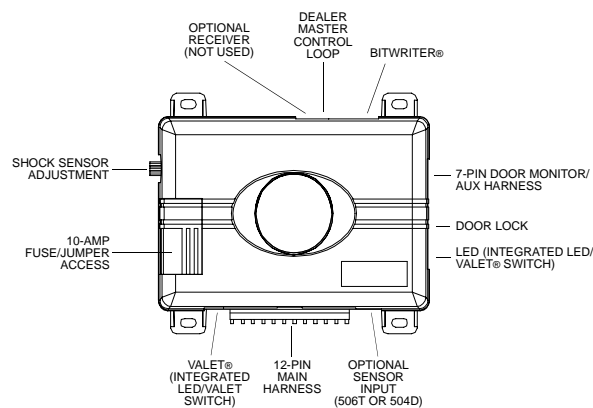
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## what is included

- Control module
- 12-pin main harness
- 7-pin door monitor/Aux harness
- Siren
- Dual-diode light flash adapter
- 4-pin sensor harness
- Valet switch
- LED
- 3-pin door lock harness
- Door lock pulse adapter

## control module



## installation points to remember

This product represents many years of research and development. It is very sophisticated and should be installed by experienced security installers only. Please do not attempt installation of this product without reading this guide. The system has been designed to provide the ultimate in security, coupled with limitless convenience and expansion options.

This product is not intended for consumer installation and will have NO WARRANTY unless it is installed by an authorized dealer.

Do not disconnect the battery if the vehicle has an anti-theft coded radio. If equipped with an airbag, avoid disconnecting the battery if possible.

**IMPORTANT!** Please read this entire installation guide before beginning the installation. The installation of this security system requires interfacing with many of the vehicle's systems. Many new vehicles use low-voltage or multiplexed systems which can be damaged by low resistance testing devices, such as test lights or logic probes. Test all circuits with a high-quality digital multi-meter before making the connections.

**IMPORTANT!** Many airbag systems will display a diagnostic code through their warning light after they lose power. Disconnecting the battery requires this code to be erased, a procedure that can require a trip to the dealer.

#### before beginning the installation:

- Check with the customer to determine the LED and Valet switch locations.
- Remove the domelight fuse. This prevents accidentally draining the battery.
- Roll down a window to avoid being locked out of the car.

#### after the install:

- Test all functions. The "Using Your System" section of the Owner's Guide is very helpful when testing.
- When testing, don't forget that this system is equipped with Nuisance Prevention<sup>®</sup> Circuitry. NPC<sup>™</sup> can bypass both sensor zones, making them seem to stop working.
- Carefully reassemble the under-dash trim panels.
- Inspect the engine compartment for tools that may have been left behind.

### tools required

This is a general list of tools required to complete the installation of this security system in most vehicles. Some vehicles may require additional tools.

- Digital multi-meter
- Wire cutters/strippers
- Nutdriver and/or socket set
- Panel removal tool

- Solderless terminal crimpers
- Cordless power drill
- Torx driver set
- Drill bit set
- Phillips head screwdriver
- Work light

## deciding on component location

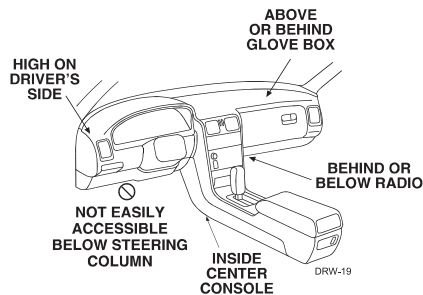
### control module

Never put the control module in the engine compartment!

The first step in hot-wiring a vehicle is removing the driver's side underdash panel to access the starter and ignition wires. If the control module is placed just behind the driver's side dash it can easily be disconnected.

When locating the control module, try to find a secure location that will not require you to extend the harnesses' wires (they are 1.5 meters long). Keep it away from the heater core (or any other heat sources) and any obvious leaks.

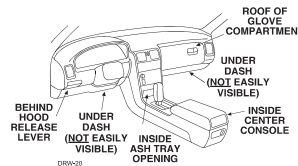
Some good control module locations: Above the glove box, inside the center console, above the underdash fuse box, above the radio, etc.





## valet/program switch

Ensure that the location you pick for the switch has sufficient clearance to the rear. The switch should be well hidden. It should be placed so passengers or stored items (such as in a glove box or center console) cannot accidentally hit it. The switch fits in a 9/32" hole.

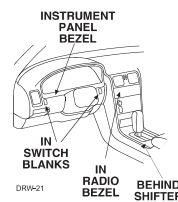


**IMPORTANT!** When the vehicle is delivered, please show the user where the switch is located and how to disarm the system with it.

## status LED

Things to remember when positioning the Status LED:

- It should be visible from both sides and the rear of the vehicle, if possible.
- It needs at least 1/2" clearance to the rear.
- It is easiest to use a small removable panel, such as a switch blank or a dash bezel. Remove it before drilling your 9/32" hole.
- Use quick-disconnects near the LED wires if the panel is removable. This allows mechanics or other installers to remove the panel without cutting the wires.



## starter kill relay

If the Starter Kill Relay or its connections are immediately visible upon removal of the underdash panel, they can easily be bypassed. Always make the relay and its connections difficult to discern from the factory wiring! Exposed yellow butt connectors do not look like factory parts, and will not fool anyone! For this reason, routing the starter kill wires away from the steering column is recommended.

## connecting your wires

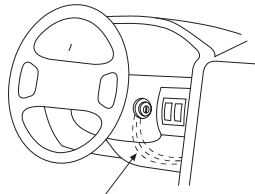
Now that you have decided where each component will be located, you're going to find the wires in the car that the security system will be connected to.

**IMPORTANT!** Do not use a 12V test light to find these wires! All testing described in this manual is described using a digital multimeter.

### obtaining constant 12V

We recommend two possible sources for 12V constant: The (+) terminal of the battery, or the constant supply to the ignition switch. **Always install a fuse within 12 inches of this connection.**

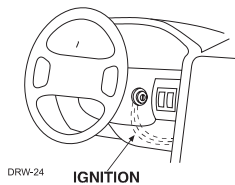
**IMPORTANT!** Do not remove the fuse holder on the red (H1/11) wire. It ensures that the control module has it's own fuse, of the proper value, regardless of how many accessories are added to the main power feed.



CONSTANT 12V DRW-23

### finding the 12V switched ignition wire

The ignition wire is powered when the key is in the run or start position. This is because the ignition wire powers the ignition system (spark plugs, coil) as well as the fuel delivery system (fuel pump, fuel injection computer). Accessory wires, on the other hand, lose power when the key is in the start position to make more current available to the starter motor. Use the following procedure to find (+)12V with your multimeter.



1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the ignition wire. The steering column harness or ignition switch harness is an excellent place to find this wire.
4. Turn the ignition key switch to the run position. If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Now turn the key to the start position. The meter display should stay steady, not dropping by more than a few tenths of a volt. If it drops close to or all the way to zero, go back to step 3. If it stays steady at (+)12V, you have found an ignition wire.

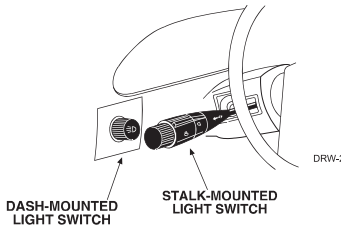
### finding a parking light wire

The parking light wire is often found near the switch. Many cars have the switch built into the turn signal lever, and in these cars the parking light wire can be found in the steering column. The same wire is often available in the kick panel or running board.

#### (+) parking light wire

Use the following procedure to find (+) parking light wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the parking light wire. Usually, the area near the headlight/parking light switch is an excellent area to start, as is the kick panel.
4. Turn on the parking lights. If your meter shows (+)12V, turn off the parking lights and make sure it goes back to zero.
5. If it does return to zero, turn the parking lights back on and, using the dash light dimmer control, turn the brightness of the dash lights up and down. If the meter

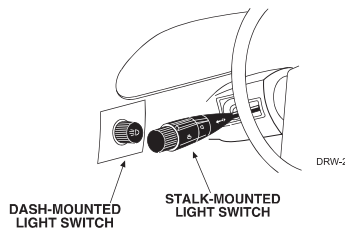


changes more than a volt when using the dimmer, look for another wire. If it stays relatively close to (+)12V, you have found your parking light wire.

(-) parking light wire

Use the following procedure to find (-) parking light wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (+) probe of the meter to +12V.
3. Probe the wire you suspect of being the parking light wire. Usually, the area near the headlight/parking light switch is an excellent area to start, as is the kick panel.
4. Turn on the parking lights. If your meter shows (+)12V, turn off the parking lights and make sure it goes back to zero.
5. If it does return to zero, turn the parking lights back on and, using the dash light dimmer control, turn the brightness of the dash lights up and down. If the meter changes more than a volt when using the dimmer, look for another wire. If it stays relatively close to (+)12V, you have found your parking light wire.



### finding the door pin switch circuit

The best places to find the door switch wire are:

**At the pin switch:** When testing at the pin switch, check the wire to ensure that it "sees" all the doors. Often, the passenger switch will cover all the doors even if the driver's switch will not.

**At the dome light:** This may not be your best choice if the vehicle has delayed domelight supervision, but it will work in vehicles with completely diode-isolated pin switches.

Often the door switch wires, described above, can also be found in the windshield pillars, running boards or kick plates.

Use the following procedure to find the door pin switch wire with your multimeter.

1. Set to DCV or DC voltage (12V or 20V is fine).

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2. In most cars, fasten the (+) probe of your meter to (+)12V constant.
3. Probe the wire you suspect of being the door trigger wire. If the meter reads (+)12V when any door is opened and the meter goes to 0 with the door closed, you have found a trigger wire.

**NOTE:** Make sure the wire you use "sees" all the doors! Some newer vehicles lack standard-type pinswitches. The dome light in these vehicles is turned on when the door handle is lifted. These usually have a wire coming out of the door into the kick panel which will provide a (-) trigger for all doors.

## main harness wire connection guide

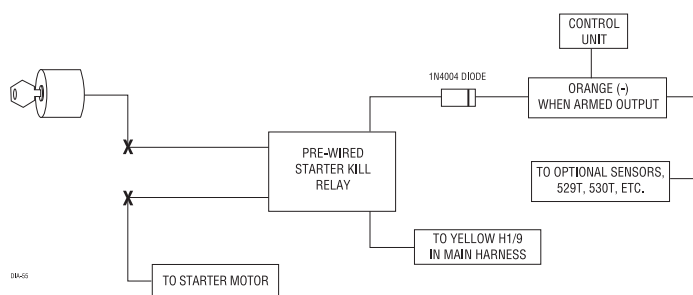
### main harness wiring diagram

H1/1	ORANGE	(-) 500mA Ground When Armed
H1/2	WHITE	(+)/(-) Light Flash Output
H1/3	WHITE/BLUE	No Function
H1/4	BLACK/WHITE	(-) 200mA Domelight Supervision Output
H1/5	GREEN	(-) Door Trigger Input
H1/6	BLUE	(-) Instant Trigger (Hood and Trunk Pin)
H1/7	VIOLET	(+) Door Trigger Input
H1/8	BLACK	(-) Chassis Ground Input
H1/9	YELLOW	(+) Ignition Input
H1/10	BROWN	(+) Siren Output
H1/11	RED	(+) 12V Constant Power Input
H1/12	RED/WHITE	(-) 200mA Auxiliary Channel/Delayed Accessory Output

## main harness wiring guide

**H1/1 ORANGE (-) 500 mA ground-when-armed output:** This wire supplies a (-) ground as long as the system is armed. This output ceases as soon as the system is disarmed. This wire controls operation of the pre-wired starter kill relay and can be used to control other optional accessories.

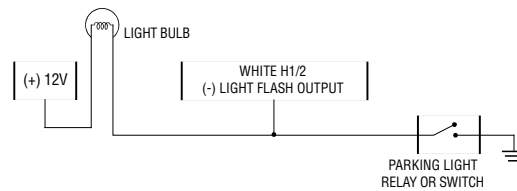
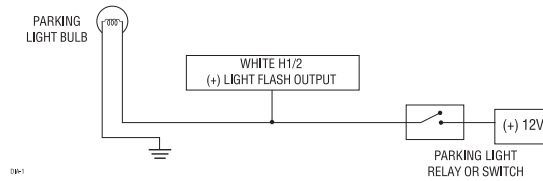
**NOTE:** If connecting the orange wire to control another module, such as a 529T or 530T window controller, a 1 amp diode (type 1N4004) will be required. Insert the diode as shown below.



**IMPORTANT!** Never interrupt any wire other than the starter wire.

**H1/2 WHITE light flash output:** As shipped, this wire should be connected to the (+) parking light wire. It will supply a (+) 10A output. If the light flash polarity fuse jumper inside the unit is moved to the opposite position (see Internal Jumpers), this wire supplies a (-) 10A output. This is suitable for driving (-) parking light wires.

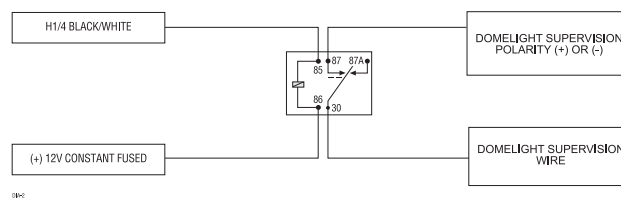
**NOTE:** A dual diode harness assembly is provided (Viper model only) for European vehicles which have parking light capability for illumination of only the parking lights on the side of the vehicle to the road when parked.



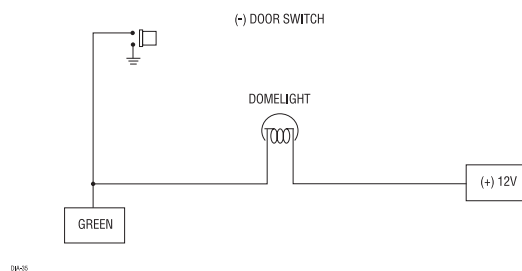
**H1/3 WHITE/BLUE no function.**

**H1/4 BLACK/WHITE (-) 200 mA domelight-supervision output:** Connect this wire to the optional domelight supervision relay.

**IMPORTANT!** This output is only intended to drive a relay. It cannot be connected directly to the domelight circuit, as the output cannot support the current draw of one or more bulbs.

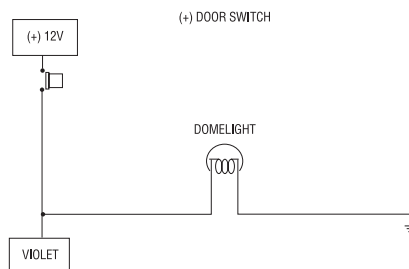


**H1/5 GREEN (-) door trigger input:** Most vehicles use negative door trigger circuits. Connect the green wire to a wire which shows ground when any door is opened. In vehicles with factory delays on the domelight circuit, there is usually a wire that is unaffected by the delay circuitry.



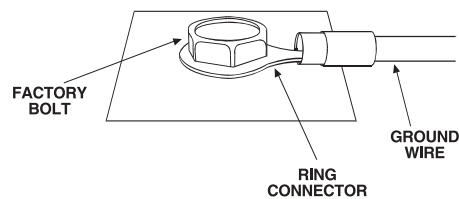
**H1/6 BLUE (-) instant trigger:** This input will respond to a negative input with an instant trigger. It is ideal for hood and trunk pins and will report on zone one.

**H1/7 VIOLET (+) door trigger input:** This wire is used in vehicles that have a positive (+) switched dome light circuit. Connect the violet wire to a wire that shows (+)12V when any door is opened, and ground when the door is closed.

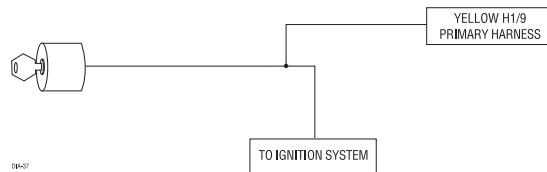




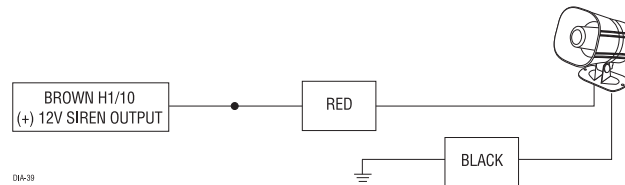
**H1/8 BLACK (-) chassis ground connection:** Connect this wire to bare metal, preferably with a factory bolt rather than your own screw. Screws tend to either strip or loosen with time. All components, should be grounded to the same point in the vehicle if possible.



**H1/9 YELLOW (+) ignition input:** Connect this wire to the (+)12V ignition wire. This wire must show (+)12V with the key in Run position and during cranking. Take care to insure that this wire cannot be shorted to the vehicle chassis at any point.



**H1/10 BROWN (+) siren output:** Connect this to the red wire of the siren. Connect the black wire of the siren to (-) chassis ground, preferably at the same point you connected the control module's black ground wire.



**H1/11 RED (+)12V constant power input:** Before connecting this wire, remove the supplied fuse. Connect to the battery positive terminal or the constant 12V supply to the ignition switch.

**NOTE:** Always use a fuse within 12 inches of the point you obtain (+)12V. Do not use the 15A fuse in the harness for this purpose. This fuse protects the module itself.

**H1/12 RED/WHITE (-) 200mA auxiliary channel/delayed accessory output:** If programmed for an auxiliary output, this wire will provide a (-) pulse when the lock button on the factory transmitter is pressed twice within three seconds. This output can be used to control optional accessories. If programmed for delayed accessory output, this wire will provide (-) ground when the ignition is turned off and will continue to output (-) ground until a door is opened then closed. This can be used to energize the accessory circuit in the vehicle to keep the radio and other accessories on after the ignition is turned off.

**IMPORTANT!** Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply (-) 200 mA, and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.

**NOTE:** Sensors and other triggers can be bypassed if this output is used to open the vehicle trunk while the alarm is armed. See H2/5 Gray zone shunting for programming and connection descriptions.

## auxiliary harness wire connection guide

### auxiliary harness wiring diagram

H2/1	BROWN	(-) Horn Honk Output
H2/2	GREEN	Arm Input
H2/3	RED	Disarm Defeat Input
H2/4	BLUE	Disarm Input
H2/5	GRAY	(+) Trunk Release/Sensor Shunt Input
H2/6	VIOLET/BLACK	No Function
H2/7	YELLOW/BLACK	Light Flash Monitor Input

### auxiliary harness wiring guide

**H2/1 BROWN (-) horn honk output:** This wire supplies a 200 mA (-) output that can be used to honk the vehicle's horn. It provides a pulsed output when the security system is armed/disarmed and in the triggered sequence or in panic mode. In most vehicle's with (-) horn circuits this wire can control the vehicle's horn without adding a relay. If the vehicle has a (+) horn circuit, an optional relay must be used to interface with the vehicle's horn circuit.

***IMPORTANT!** Never use this wire to drive anything but a relay or a low-current input! This transistorized output can only supply (-) 200 mA, and connecting directly to a solenoid, motor, or other high-current device will cause the module to fail.*

**H2/2 GREEN for arm input:** Connect this GREEN wire to a wire that changes state when the doors are locked using the factory keyless entry transmitter. This wire can accept a positive (+) or negative (-) input. The vehicle's power door lock motor wire is ideal.

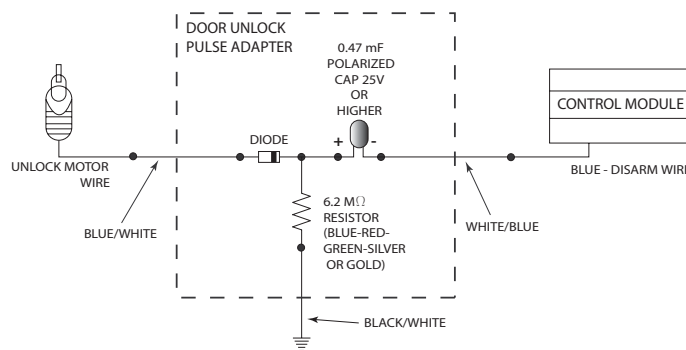
**H2/3 RED disarm defeat input:** This wire is used to prevent the interior door lock switches from disarming the system. To determine the best location to interface this wire, first test the operation of the remote keyless entry system. When unlocking the doors with the factory remote transmitter, does the driver's door unlock first? Most

vehicles operate this way. If this is the case connect the RED wire to the passenger unlock motor wire. When testing this wire be sure that it shows 12V (+) ONLY when the unlock button on the factory transmitter is pressed the second time to unlock the passenger doors. If the factory keyless entry system unlocks all of the doors at the same time, it is recommended that the H2/7 YELLOW/BLACK wire be used for disarm defeat input.

**NOTE:** The H2/3 wire connection is not required if using H2/7 YELLOW/BLACK as a disarm defeat wire.

**H2/4 BLUE disarm input:** Connect the BLUE wire to a wire that changes state when the doors are unlocked using the factory keyless entry transmitter. If the factory transmitter unlocks the driver's door first, the BLUE wire must be connected to the wire that changes state when the driver's door is unlocked by itself. In this case, find the driver's door unlock motor wire. In most vehicle's this wire can be found in the driver's kick panel.

**NOTE:** Some vehicles (some of the Honda, GM and Ford) have long door lock pulses. These long pulses may interfere with the disarm function of this system when unlocking all doors using the factory OEM remote. Use the supplied door unlock pulse adapter for these vehicles. Refer to the diagram below.



**H2/5 GRAY trunk release/sensor shunt input:** This input is used to bypass the sensor inputs when the trunk is opened using the factory keyless entry system or trunk release relay while armed. When the system receives a (+) input on this wire, zones 1, 2 and 4 are bypassed for 3-seconds. If during that 3-seconds, ground is applied to the H1/6

BLUE wire then the alarm zones are bypassed (See Feature menu 1/8) and will remain bypassed until the ground input is removed. This means that when the trunk is open with the factory transmitter the only triggers that remain active while the trunk is open are the doors and ignition. 3-seconds after the trunk is closed the bypassed zones again become active.

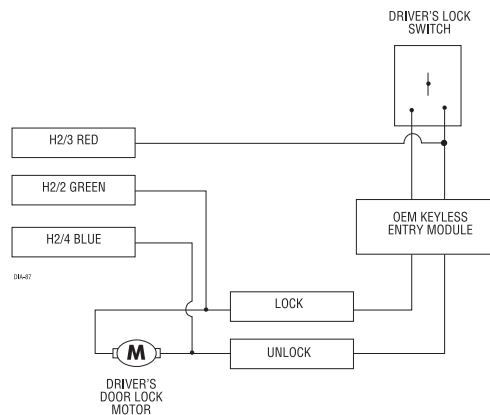
#### **H2/6 VIOLET/BLACK no function.**

**H2/7 YELLOW/BLACK light flash monitor input:** This input monitors the factory system light flash output and can be used as a disarm defeat wire. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc., depending on the vehicle type and manufacturer. This wire can accept a (+) positive or (-) negative input.

### **keyless entry systems—three types**

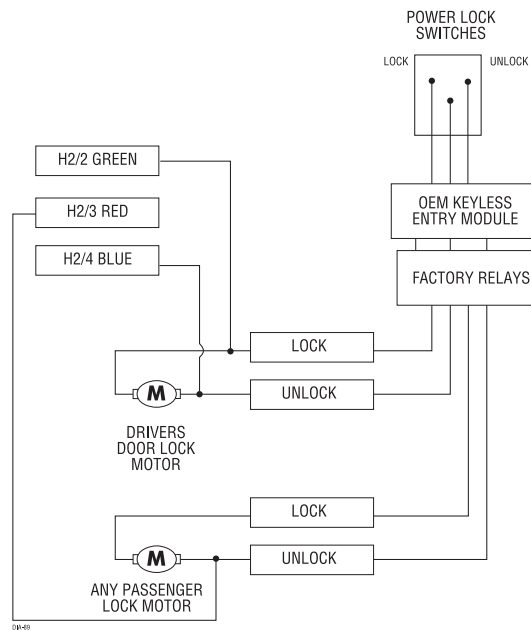
There are three main types of keyless entry systems. Systems that unlock the driver's door first and have internal relays, systems that unlock the driver's door first but have external relays, and systems without driver's priority door unlock.

factory remote—driver's door unlock



# external relays—driver's door unlock

This system is used in many four-door GM sedans. To test for this type of system, probe the unlock wire from the interior switch (black or white). Unlock the driver's door, by itself, using the factory remote. If the switch wire shows (+) 12V, then use the following diagram:

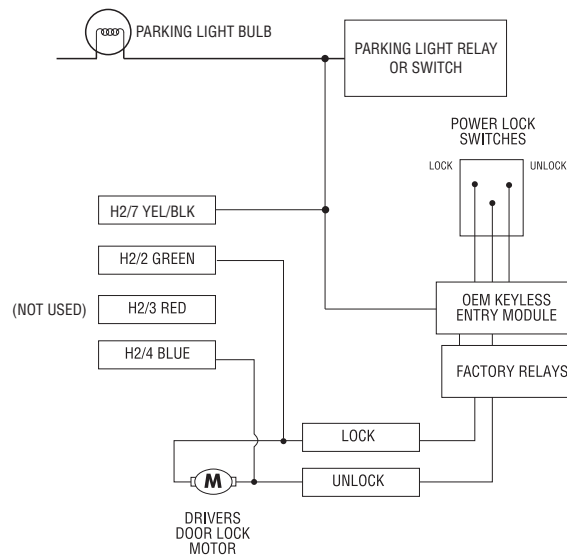


**NOTE:** It is often easy to access the passenger unlock wire going to the rear door motor on the driver's side.

no priority—driver's door unlock

This type of keyless entry system is common in import vehicles as well as many Jeep vehicles. When unlocking the doors with the transmitter all doors unlock at the same time. It is recommended to use H2/7 YELLOW/BLACK wire for Disarm Defeat instead of the H2/3 RED wire. This input wire monitors the factory system light flash output. Connect this wire to the light flash wire that flashes when the factory transmitter is used. This may be a status LED, parking lights, reverse lights, etc., depending on the vehicle type and manufacturer. Do NOT connect this wire to the domelight. This wire can accept a (+) positive or (-) negative input.

For installation, please refer to the diagram below.



## door lock harness wire connection guide

These door lock outputs are for Passive arming control of the factory door locks. They can also be used to control the door locks with the ignition switch for vehicle that do not have this feature in the factory RKE system.

<b>H3/A</b>	GREEN	(-) Lock, (+) Unlock Output
<b>H3/B</b>		Not Used
<b>H3/C</b>	BLUE	(-) Unlock, (+) Lock Output

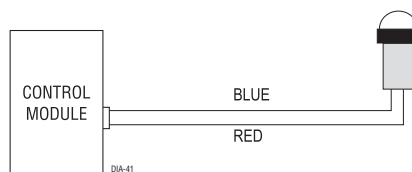
The control module can control 2 common power door lock types without any additional parts. With certain vehicles, or if an actuator is to be installed, either a 451M Door Lock Relay Satellite or two relays will be required. Refer to TechTips document 1041.

## plug-in harnesses

### super bright LED, 2-pin WHITE plug

The super bright LED operates at (+) 2 volt DC and plugs into the two-pin WHITE port. Make sure the LED wires are not shorted to ground as the LED will be damaged. Multiple LED's can be used, but they must be wired in series. The LED fits into a 9/32-inch mounting hole. Be sure to check for clearance prior to drilling the mounting hole.

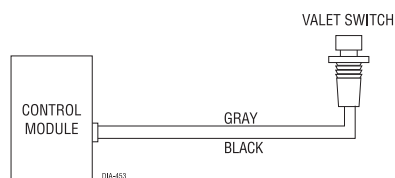
**NOTE:** Never use a BLUE LED in combination with a RED LED.





### valet/program button, 2-pin BLUE plug

The Valet/Program button should be accessible from the driver's seat. It plugs into the BLUE port on the side of the unit. Since the system features Valet® by using the remote transmitter, the button can be well hidden. Consider how the button will be used before choosing a mounting location. Check for rear clearance before drilling a 9/32-inch hole and mounting the button. The GRAY wire in the two-pin plug may also be used as a (+) ghost switch input and can be connected to any (+) switch in the vehicle. (See Feature Descriptions section of this guide.)



### data port—Bitwriter®

The black three-pin port can be used for programming the unit using the Directed Bitwriter, a hand held programming tool. The Bitwriter also allows programming of features that are not available in the feature menus.

## four-pin optional sensor harness

### RED wire

The red wire supplies constant power to the optional sensor.

### BLACK wire

The black wire supplies ground to the optional sensor.

### BLUE, GREEN wires

The blue and green wires are multiplex inputs. They are both tied to the same zone. If an input of less than 0.8 seconds is supplied to either wire the Warn-Away® response will occur. An input longer than 0.8 seconds to either wire will initiate the triggered sequence and report zone 4. This port can be used for optional sensors such as: the 506T—glass breakage sensor, or the 504D—field disturbance sensor.

## door lock learn routine

Before the unit will respond to the factory remote keyless system, it must learn the polarity of the door lock wires. To learn the lock polarity:

**NOTE:** It is important that all the INPUT signals to the control module are in the rest state (no activity) before entering the learn routine.

### to learn lock:

*NOTE: Make sure the doors, hood and trunk are closed so the factory RKE system operates as it would when the user is using it.*

1. **With all the doors, hood and trunk closed:** Press and HOLD the Valet® button.
2. **Within 5-seconds:** Turn the ignition On and then Off (leave for less than 2-seconds in the on position).
3. **Within 5-seconds:** Release the Valet® button.
4. **Within 5-seconds:** Press and release the Valet® button once.
5. **Within 5-seconds:** Press and HOLD the Valet® button. The LED will flash to indicate that the lock routine is ready to be learned.
6. **Press lock button:** Press the lock button on the factory transmitter. Wait for the LED to illuminate to indicate the the lock learn was successful. If the learn was unsuccessful the LED would continue to flash.
7. **Release the Valet® button.** Now advance to the learn Unlock routine.

### to learn unlock:

1. **Within 5-seconds** of the learn lock routine (step 7), press and release the Valet® button once.
2. **Within 5-seconds:** Press and HOLD the Valet® button. The LED will flash in groups of two flashes to indicate that the unlock routine is ready to be learned.
3. **Press unlock button:** Press the unlock button on the factory transmitter. The LED will illuminate for a maximum of 5-seconds to indicate that the unlock learn was successful. If the learn was unsuccessful the LED would continue to flash in groups of two.
4. **Release the Valet® button.**

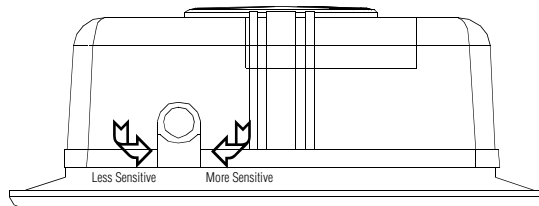
**NOTE:** If the Unlock learn was unsuccessful, the Unlock procedure can be repeated by using the LOCK learn procedure, except that at step 4 press and release the Valet® button TWICE. (The LED will flash in groups of two flashes.)

#### to exit the learn routine:

Do one of the following:

- Turn the ignition on.
- No activity for longer than 15 seconds.
- Press the Valet® button too many times.

### on-board dual stage shock sensor

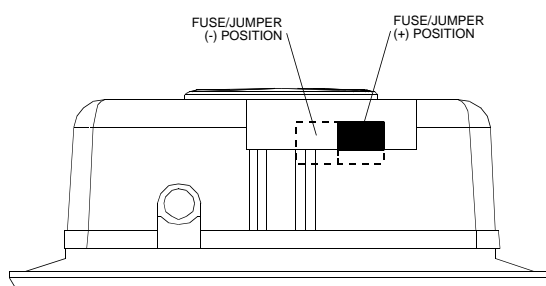


There is a dual-stage shock sensor inside the control module. Adjustments are made via the rotary control as indicated above. Since the shock sensor does not work well when mounted firmly to metal, we recommend against screwing down the control module. The full trigger of the onboard shock sensor reports zone 2. See Table of Zones.

**NOTE:** When adjusting the sensor, it must be in the same mounting location that it will be after the install is completed. Adjusting the sensor and then relocating the module requires readjustment.

## internal programming jumper

A 10A fuse is used as both a fuse and a program jumper. This jumper determines the light flash output polarity. In the (+) position, the on-board relay is enabled and the unit will output (+)12V on the WHITE wire, H1/2. In the (-) position, the on-board relay is enabled for (-) output on the WHITE wire, H1/2. To access the jumper, remove the sliding door from on top of the control module, as shown below.



## zones

Zone Number	Trigger Type	Input Description
1	Instant trigger	Hood and/or trunk pin switches.
2	Multiplexed input	Heavy impact from on-board Doubleguard® shock sensor.
3	Two-stage, progresses from warning to full alarm	Door switch circuit.
4	Multiplexed	Optional sensor, Inputs shorter than 0.8 seconds will trigger Warn Away® response, while inputs longer than 0.8 seconds will instantly trigger full alarm.
5	Two-stage (similar to zone 3)	Ignition input.

**NOTE:** The Warn Away® response does not report on the LED.

## long term event history

The control module will store the last 2 triggers in memory that are not erased when the ignition is turned on. This can be helpful for trouble shooting false alarm reports. To access the event history use the following procedure.

1. Turn the ignition switch off and press and hold the Valet® button.
2. While holding the Valet® button turn the ignition On.
3. Release the Valet® button.
4. Within 5-seconds, press and release the Valet® button.

The LED will flash in groups indicating the last two zones reported triggered. For example, if zone 2 and 3 were the last two zones to be triggered, the LED will flash two times followed by a pause and then flash three times followed by a pause.

*NOTE: The Warn Away® response does not report on the LED.*

The Long Term Event History will exit if the ignition is turned off or there is no activity for 60-seconds.

## rapid resume logic

The current state of the alarm will be stored in non-volatile memory. If power is lost and then reconnected, the system will recall the stored state from memory (arm, disarm, and Valet® mode).

## feature programming

The feature programming routine is used to access and change any of the feature settings in the two menus below. The feature settings can be accessed and changed by using one of the following:

- The Valet® button to enter the feature programming routine.
- Use of the Directed Electronics Bitwriter® is recommended. Expanded programming options are only available when using the Directed Electronics Bitwriter®.

***NOTE:** If Feature Programming Lockout is set to ON, all features will be locked and can **ONLY** be accessed by using a Bitwriter®.*

### to enter feature programming routine

1. Open a door.
2. Turn the ignition on and then off.
3. Close the door.

***NOTE:** If the domelight is used for the door trigger input, the dome light must be OFF before proceeding to the next step.*

4. Within 5-seconds, press and HOLD the Valet® button. After 3-seconds the horn will sound once to indicate entry into the first features menu. To select the second features menu, continue to hold the Valet® button until the horn sounds twice. Once the desired menu is selected, release the Valet® button.

5. Within 5-seconds, press and release the Valet® button the number of times corresponding to the desired feature listed below. Then press the Valet® button one more time and **hold**. The horn will sound the number of times equal to the feature number selected.

6. While holding the Valet® button, assign the selected feature to a factory button by either pressing Lock for 1 short horn honk setting or pressing Unlock for 2 short horn honk setting.

### once a feature is programmed

- Another feature(s) can be programmed.
- The other feature menu can be selected.
- The Learn Routine can be exited.

### accessing another feature

- Release, then press and release the Valet® button the number of times to advance from the feature just programmed to the next feature desired.
- Press and **hold** the Valet® button once more.
- The horn will chirp to confirm the feature selected.

### accessing another menu

- Release, then press and release **hold** the Valet® button.
- After 3-seconds, the unit will advance to the next menu and the horn will sound 2 times to indicate feature menu 2 has been entered.

### exiting feature programming

- Open the door.
- Turn the ignition On.
- No activity for 15-seconds.
- Press and release the Valet® button too many times.





**Bitwriter® ONLY features**

Due to memory limitations for this system, the following features can only be programmed using Directed's Bitwriter® programmer. Factory default settings are shown in **bold**.

B-1	<b>Forced passive arming ON</b>	Forced passive arming OFF
B-2	<b>NPC ON</b>	NPC OFF
B-3	<b>Panic with ignition ON</b>	Panic with ignition OFF
B-4	Dealer security features ON	<b>Dealer security features OFF</b>
B-5	<b>Transmitter programming UNLOCKED</b>	Transmitter programming LOCKED
B-6	<b>Feature programming UNLOCKED</b>	Feature programming LOCKED
B-7	<b>Siren duration — 0 to 180 seconds programmable</b>	

## features #1 menu

Factory default settings are shown in **bold**.

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
1-1	<b>Active arming</b>	Passive arming
1-2	<b>Chirps ON</b>	Chirps OFF
1-3	<b>Door Trigger Error Chirp ON</b>	Door Trigger Error Chirp OFF
1-4	<b>Ignition-Controlled Domelight ON</b>	Ignition-Controlled Domelight OFF
1-5	<b>Panic Enabled (OEM upgrade)</b>	Auxiliary Output Enabled (OEM upgrade)
1-6	<b>Auxiliary Output</b>	Delayed Accessory Output
1-7	<b>Delayed Door Trigger</b>	Instant Door Trigger
1-8	<b>Sensor shunt zones 1, 2 &amp; 4</b>	All zones
1-9	<b>Siren Duration–30 seconds</b>	Siren Duration–60 seconds
1-10	<b>Valet® switch input: 1-pulse</b>	Valet® switch input: 2-5 pulses
1-11	<b>Horn pulse honk duration 0.020 seconds (does not affect full trigger pulse duration)</b>	0.030, 0.040, 0.050 seconds

## features #2 menu

Factory default settings are shown in **bold**.

*NOTE: Feature step number 6 and 7 are not applicable to the this model.*

Feature Step	Lock Button (one chirp)	Unlock Button (two chirps)
2-1	<b>Ignition-Controlled Locking ON</b>	Ignition-Controlled Locking OFF
2-2	<b>Ignition-Controlled UnLocking ON</b>	Ignition-Controlled Unlocking OFF
2-3	<b>Active Locking</b>	Passive Locking
2-4	<b>Door Lock Pulse Duration-0.8 sec.</b>	Door Lock Pulse Duration-3.5 sec.
2-5	<b>Single Unlock Pulse</b>	Double Unlock Pulse
2-6	<b>Channel 3: Validity</b>	Channel 3: Second Unlock
2-7	<b>Code Hopping ON</b>	Code Hopping OFF

## features description

### bitwriter®

- B-1 FORCED PASSIVE ARMING ON/OFF:** These settings control whether the system arms passively in the event a door is left open accidentally by the user. Passive arming must be programmed on for this feature to work.
- **Forced passive arming ON (Default):** in this setting if passive arming is programmed on and a zone is active (door open) after the ignition is turned off, the system will bypass the zone after 1 hour, then arm and monitor the rest of the security zones.
  - **Forced passive arming OFF:** in this setting the system will not passive arm if any zone is left open after the ignition is turned off.
- B-2 NUISANCE PREVENTION CIRCUITRY™ (NPC™) ON/OFF:** These settings control the number of times a sensor can trigger the system within a given time period.
- **NPC ON (Default):** in this setting any sensor that triggers more than 3 times within a 1 hour period will be bypassed for a minimum of 1 hour. If within that 1 hour the system sees the same sensor trigger again it will not activate the siren and will restart the 1 hour timer.
  - **NPC OFF:** in this setting the sensors will trigger repeatedly until the system is disarmed.
- B-3 DEALER SECURITY FEATURES ON/OFF:** This feature is not available on this model.
- B-4 TRANSMITTER PROGRAMMING UNLOCKED/LOCKED:** This feature is not available on this model.
- B-5 FEATURE PROGRAMMING UNLOCKED/LOCKED:**
- **Unlocked (default):** In this setting the features can be changed using the Valet switch and the vehicle OEM transmitter.
  - **Locked:** in this setting the features can not be changed using the Valet switch and the vehicle OEM Transmitter. If locked, the unit will emit 1 long chirp when trying to enter feature programming.
- B-6 SIREN DURATION** The Bitwriter can adjust the siren duration setting anywhere from 1 second to 180 seconds in length.

## menu #1

- 1-1 ACTIVE/PASSIVE ARMING: These settings control the systems mode of arming.
- Active arming mode (default): the system will only arm when the transmitter is used.
  - Passive arming mode: the system will arm automatically 30 seconds after the last door is closed or can be armed anytime using the transmitter.
- 1-2 CHIRPS ON/OFF: This setting controls the systems arming & disarming chirps.
- Chirps ON (default): the system will emit chirps when arming and disarming.
  - Chirps OFF: the system will NOT emit chirps when arming and disarming.
- 1-3 DOOR TRIGGER ERROR CHIRP ON/OFF: These settings control the warning chirp that is generated if the system is armed with the door trigger input active, either due to an open door or factory delayed dome light circuit.
- Error chirp ON (default): The siren will emit a single chirp and bypass the active input when arming the system.
  - Error chirp OFF: The siren will NOT emit a chirp due to an active input when arming and will bypass the active input. This setting is helpful for vehicles with factory delayed dome lights.
- A few seconds after the input stops (delay dome light off, door closed) the system will again monitor the door trigger input.
- 1-4 IGNITION-CONTROLLED DOMELIGHT ON/OFF: These settings control whether or not the dome light illuminates when turning the ignition off.
- IGN dome light ON (default): The dome light will illuminate for 30 seconds each time the ignition is turned off
  - IGN dome light OFF: The dome light will only turn on when disarming the system and turn off when the ignition is turned on.
- 1-5 PANIC/AUXILIARY OUTPUT ENABLED: These settings change the systems ability to activate panic mode or the Channel 2 output.
- Panic mode enabled (Default): in this setting if the system sees the vehicle doors lock 2 times rapidly the Panic mode will be activated for the programmed siren duration.
  - Auxiliary channel output: in this setting the auxiliary channel output described in Feature #6 will be activate as programmed.

1-6 AUXILIARY/DELAYED ACCESSORY OUTPUT: These settings change Red/white auxiliary output operation.

- Auxiliary output (default): in this setting if the system sees the vehicle doors lock 2 times rapidly the red/wht auxiliary channel will activate for 800mS. This is useful for adding trunk release option.
- Delay accessory output: In this setting the red/wht auxiliary channel will turn on a few seconds after the ignition is turned on and remain on until a door is opened/closed, the system is armed or 1 hour lapses.

1-7 DELAYED/INSTANT DOOR TRIGGER: These setting control the siren output when the system is set off by the door trigger input.

- Delay ON (default) in this setting if the door is opened while the system is armed the siren will chirp 10 times prior to the constant siren output. This is still an instant trigger and closing the door quickly will not stop the trigger sequence.
- Delay Off: in this setting if the door is opened while the system is armed the siren will emit a constant siren output immediately

1-8 SENSOR SHUNT ZONES 1, 2 AND 4/ALL ZONES: These settings define which zones are bypassed when opening the trunk while the system is armed.

- Sensor zones 1, 2 & 4 (default): in this setting zones 1, 2 & 4 are shunted when the H2/5 gray wire sees a +12V input moments before H1/6 blue sees a ground input.
- All zones: in this setting ALL zones are shunted when the H2/5 gray wire sees a +12V input moments before H1/6 blue sees a ground input. ALL zones will be bypassed until 5 seconds after the ground ceases on the blue wire.

1-9 SIREN DURATION 30/60 SECONDS: These settings change the siren output from 30 seconds to 60 seconds duration when in the panic mode and when the system is fully triggered. The siren duration can also be programmed from 1-180 seconds in 1 second increments using the Bitwriter®.

1-10 VALET® PULSE COUNT 1-5 PULSES: These settings change the number of times the valet switch must be pressed to disarm the system without a transmitter.

- 1 pulse (default): setting is 1 pulse.
- 2-5 pulses: these settings will make it more difficult for a thief to defeat the system.

1-11 HORN PULSE HONK DURATION: These settings adjust the pulse length of the optional horn honk output and allow for connection to more and less efficient vehicle horns without annoyingly loud arm/disarm honks.

- 20mS (default): for more efficient vehicle horns
- 30/40/50mS: for less efficient vehicle horns

## menu #2

2-1 IGNITION-CONTROLLED LOCKING ON/OFF: This settings control whether the doors lock automatically after ignition is turned on.

- Lock ON (default): in this setting the doors will lock automatically 3 seconds after the ignition is turned on.

*NOTE: This output is bypassed if a door is opened at the time the ignition is turned on.*

- Lock Off: The doors will not lock automatically when the ignition is turned on.

2-2 IGNITION-CONTROLLED UNLOCKING ON/OFF: This settings control whether the doors unlock automatically when ignition is turned off.

- Unlock ON (default): in this setting the doors will unlock automatically when the ignition is turned off.
- Unlock OFF: The doors will not unlock automatically when the ignition is turned off.

2-3 ACTIVE/PASSIVE LOCKING: These settings control whether the doors lock when the system arms passively. Passive arming must be programmed on for this feature to work.

- Passive locking OFF (default): in this setting the doors will not lock when the system arms passively. They will only lock when the transmitter is used to arm the system.
- Passive locking ON: in this setting the doors WILL lock when the system arms passively. The doors can also be locked when using the transmitter to arm the system.

*NOTE: Remember, when passive arming is selected, the unit will chirp 20 seconds after the last door is closed. The system does not actually arm or lock the doors until 30 seconds after the door has been closed.*

2-4 DOOR LOCK PULSE DURATION: These settings control the pulse length of the door lock output.

- 0.8seconds (Default): in this setting the output length is 800mS and can control the majority of vehicle door lock systems.
- 3.5 seconds: in this setting the output length is 3.5 seconds and is usually used in European vehicles with vacuum pump operated door locks.

2-5 SINGLE/DOUBLE PULSE UNLOCK: These settings control the number of unlock output pulses.

- Double pulse unlock OFF (default): in this setting the door lock output will pulse 1 times only.
- Double pulse unlock ON: in this setting the door lock output will pulse 2 times. This is needed in vehicles that have driver door priority unlocking on the first pulse and passenger unlock on the 2nd pulse.

2-6 CHANNEL 3 VALIDITY/LATCHED/LATCHED RESET WITH IGNITION/30 SECOND TIMED/SECOND UNLOCK OUTPUT/DELAYED ACCESSORY OUTPUT: This feature is not available on this model.

2-7 CODE HOPPING™ ON/OFF: This feature is not available on this model.



## troubleshooting

### starter kill does not work:

- Is the correct starter wire being interrupted? If the car starts when the starter kill relay is completely disconnected, the wrong starter wire has been cut and interrupted.
- Is the yellow wire connected to "true" ignition? Make sure this wire is connected to a wire that has power in the run and start positions.

### the Valet® switch does not work.

- Is it plugged into the correct socket?
- Is the H1/9 YELLOW wire properly connected? See Primary Harness (H1) Wire Connection Guide section of this guide.
- Was the correct hole size drilled (5/16"). See *Valet® button* section of this guide.

### status LED does not work.

- Is the LED plugged into the small white port on the side of the control unit?

### Passive or Ignition controlled door locks operate backwards.

- This unit has easily-reversed lock/unlock outputs. Recheck Harness 3, (+/-) Door Lock Outputs section to see if you have reversed these.

### the siren sounds when the unit enters panic mode, but the confirmation chirps do not work when locking and unlocking.

- Are the confirmation honks turned on in programming? See Operating Settings Learn Routine and Feature Descriptions sections.
- Is the unit in Valet mode.

### **Door Lock Learn Routine does not learn door locks.**

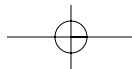
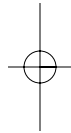
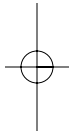
- Check connections to be sure everything is properly connected. Refer to the *Keyless Entry Systems—Three Types* section of this guide for correct wire connections.
- Check the *Door Lock Learn Routine* section of this guide to ensure the correct procedure is being used.

### **Door Lock Learn Routine does not work, the unit enters the learn routine then chirps horn and exits.**

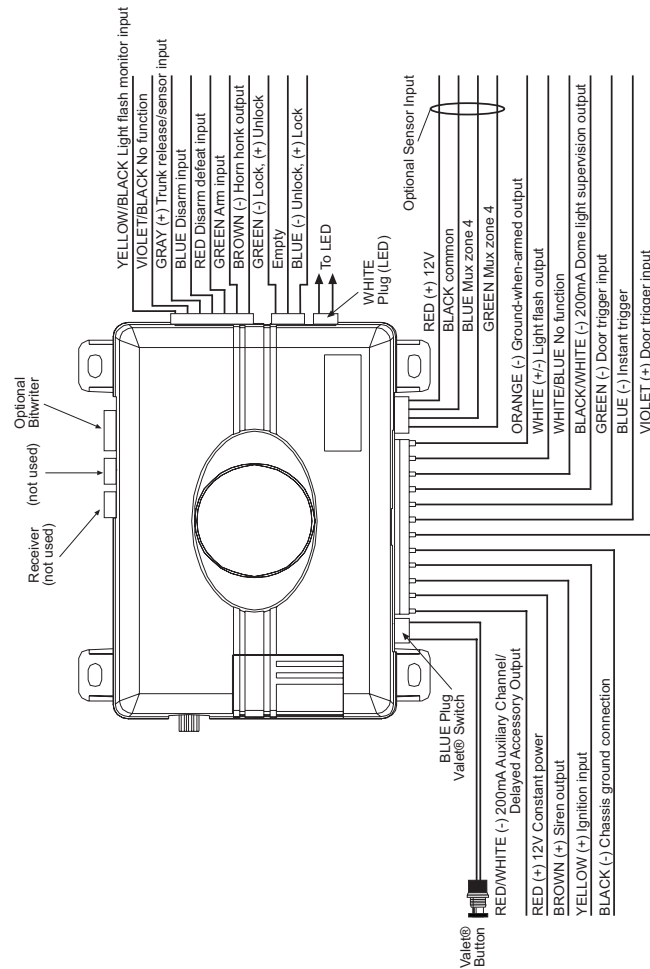
- Some cars do not flash the parking lights with the door open. For these vehicles, to program the unit correctly the door needs to be closed (so that the parking lights will flash with the factory keyless system).

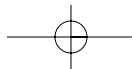
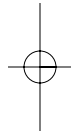
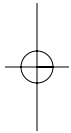
### **Feature Programming routine does not work, the unit enters the learn routine then chirps and exits.**

- Check the Door Input connections. If the dome light is used for door trigger input, then the dome light must turn off in step 3.



## wiring quick reference guide





# Directed Electronics, Inc. Production

Printed by Kenny Snoddy

Printed on December 07, 2009

Page Arena > Workspace Items > Specs > Summary

All information contained in this document is proprietary and confidential.

(001 - 099) FGI, Finished Good Item

Item #010-0034 In Production

## 427V, VIPER 330V, OEM UPGRADE SECURITY SYSTEM

Revision: Working Revision \* | **Modified**, Shared, 0 Views Locked

- Summary
- Redline

**Category** (001 - 099) FGI, Finished Good Item

**Item number** 010-0034

**Revision**

**Item name** 427V, VIPER 330V, OEM UPGRADE SECURITY SYSTEM

**Lifecycle phase** In Production

**Assembly type**  Highest accessible assembly

**Primary File** None specified

**Associated Files** 0 (plus 0 Supplier Item files)

**Description**

**Owner** Kenny Snoddy

**Prototype cost** \$0.00

**Production cost** \$0.00

**Procurement Type** Made-to-Specification (MTS)

**Unit of Measure** each

**Item Creator** Paul Schomberg (Arena)

**Item created on** October 30, 2007

### Setup Sheet Information

**Barcode ID** 0 93207 00855 9

**Country of Origin** China

**M/C I/w/h** 16 3/4"x15 1/2"x12 3/4"

**M/C Weight (lbs.)** 36.45

**M/C Quantity** 18

**Giftbox I/w/h** 7 1/2" x 5 1/4" x 4"

**Unit Weight (lbs.)** 1.95

**Pallet Quantity**

**Brand Number** 12

### Associated Part Numbers

**ACCPAC P/N** 427V



**Search Field** REV C: D/C 61 10/02/06 ADD EMARK TO CPU HOUSING (ECF7054), -D/C 6C 04/06/06 REMOVE ADDENDUM, -D/C 6A 02/21/06 1ST RECEIPT FROM PORTMAN W/ NEW HEX(ECF5845), -D/C 5L 01->02/06,BLUE HI-LITER ON D/C STICKER, PURGE STOCK, FLASH MCU SOFTWARE IS NOW REV D, ADD ADDENDUM (ECF5845)REV B: D/C 5F, 08/01/05, REVISE DIAGRAM IN IG, WAS 01-05 IS 05-05 (ECF5700), -D/C 5C 05/02/05, INCLUDE PORTMAN 514N IN KIT FROM FACTORY, ROLL 100-0081 BOM INTO 010-0034 W/SIREN. M/C QUANTITY WAS 16, IS 18 (ECF5640)REV A: D/C 4L, 01/26/05 (ECF\_\_\_\_\_), WEIGHTS: 1.40 lbs, M/C 24.20 lbs. REWORK 100-0081 TO ADD 100-0049 NUTK 514N(B) UNTIL PORTMAN 514N IS READYFOLDER 401-4040

**Team** Security

**Project**

**Obsolete Attributes**

These are attributes that are either no longer used or are migrating to be included into one of the other existing Attributes

---

**Detail**

**Additional Attributes**

---

**Control Plan**



# Directed Electronics, Inc. Production

Printed by Kenny Snoddy

Printed on December 07, 2009

Page Arena &gt; Workspace Items &gt; Bill of Materials &gt; Indented

All information contained in this document is proprietary and confidential.

(001 - 099) FGI, Finished Good Item

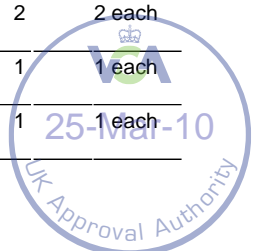
Item #010-0034 In Production

## 427V, VIPER 330V, OEM UPGRADE SECURITY SYSTEM

Revision: Working Revision \* | **Modified**, Shared, 0 Views Locked

Contains 12 first-level Items, 55 line Items, 55 unique Items

#Item Number	Item Name	Category	Phase	Wkg Mods	Files	Rqmts	Qty
▶ 1 100-0082(A)	514N, 6 TONE, NEO, SOFT CHIRP,PM	(100 - 119) Kitted Assembly	In Prod				1 each
▼ 2 100-0150(A)	427V HARNESS KIT	(100 - 119) Kitted Assembly	In Prod				1 each
1 150-0191(A)	HRN, 2-WIRE, DUAL DIODE ISOLATED LIGHT FLASH 1-WIRE/2-WIRE, UNFUSED	(150) Harness and Cables	In Prod		2		1 each
▶ 2 150-0222(A)	HRN, LED, 2.50MM 2-PIN, 2-WIRE, CON/BLUE LED, BLUE DIFFUSER	(150) Harness and Cables	In Prod		2		1 each
3 150-0223(A)	HRN, SWITCH, 2.50MM, 2-PIN,2-WIRE, VALET SW, MOMENTARY, SNAP FIT, BLUE CON/ SW	(150) Harness and Cables	In Prod		2		1 each
4 150-0232(A)	HRN, 2.50MM, 3-PIN, 2-WIRE, WHITE CON/WIRE	(150) Harness and Cables	In Prod		2		1 each
5 150-0235(A)	HRN,2.0MM,4-PIN,4-WIRE WHITE CON/WIRE	(150) Harness and Cables	In Prod		2		1 each
6 150-0236(A)	HRN,2.50MM,7-PIN,7-WIRE WHITE CON/WIRE	(150) Harness and Cables	In Prod		2		1 each
7 150-0248(A)	HRN,DOOR UNLOCK PULSE ADAPTER	(150) Harness and Cables	In Prod		2		1 each
▼ 3 121-0112(D)	VIPER 330V CONTROL MODULE, SERIALIZED, OEM UPGRADE	(120 - 149) Final Assembly	In Prod				1 each
▶ 1 170-0021(G)	PCBA, CTRL, 427, W/SHOCK,	(170) PCB Assembly	In Prod		2		1 each
2 450-0036(A)	HDW, SCREW, PANHEAD, PHILLIPS, BLACK, M3	(450 - 490) Hardware	In Prod				4 each
3 530-0011(A)	LBL, TAMPER-PROOF DATE CODE LABEL, RECTANGULAR	(500 - 599) Printed Materials	In Prod		2		1 each
4 530-0069(A)	LABEL, SERIAL NUMBER, 427V	(500 - 599) Printed Materials	In Prod				1 each
5 620-0272-02(A)	PLASTIC HOUSING, CPU TOP, 427,436	(600 - 690) Mechanical	In Prod		2		1 each
6 620-0273-01(B)	PLASTIC HOUSING, CPU BOTTOM, 427,436	(600 - 690) Mechanical	In Prod		2		1 each
7 620-0274-01(A)	PLASTIC SLIDE DOOR, CPU, 427,436	(600 - 690) Mechanical	In Prod		2		1 each
8 670-0009-02(A)	GEL BADGE, ROUND, 28MM, VIPER, PM	(600 - 690) Mechanical	In Prod		2		1 each
▶ 4 150-0189(E)	HRN, 3.96MM, 12-POS, 12-WIRE, FUSED W/STARTER KILL, CON/WIRE, W/ UNFUSED LIGHT FLASH WIRE	(150) Harness and Cables	In Prod		2		1 each
▶ 5 500-0108(01-05)	OG, G427V, VIPER, 330V, OWNERS GUIDE	(500 - 599) Printed Materials	In Prod		1		1 each
6 510-0127(05-05)	IG, VIPER, 330V, INSTALLATION GUIDE	(500 - 599) Printed Materials	In Prod		1		1 each
7 520-0099(11-04)	GB, VIPER, 330V, GIFTBOX	(500 - 599) Printed Materials	In Prod				1 each
8 530-0062(A)	LBL, VIPER WINDOW DECAL, NO PHONE NUMBER	(500 - 599) Printed Materials	In Prod		2		2 each
9 540-0058(07-00)	INSERT, PATENT CARD, w/ QUALITY BY DESIGN BACKGROUND	(500 - 599) Printed Materials	In Prod		1		1 each
10 540-0070(04/14/09)	INS, XFJ01-01, SECURITY RESPONSE CARD INSERT	(500 - 599) Printed Materials	In Prod		1		1 each





#Item Number	Item Name	Category	Phase	Wkg Mods	Files	Rqmts	Qty
11 901-10036(2.4)	ENGINEERING PRODUCT SPECIFICATION, 427M, 2003	-uncategorized-	In Prod		1	1	each
12 910-0014(4)	CONTROL PLAN, SNTX/RX-1	(900 - 999) Document	In Prod		1	1	each





## TEST REPORT

# Automotive

**Test of:** Vehicle Security System.

**Model Number:** Avital 3001L.

**SGS Reference :** AUT130731/4/GH/10.

**VCA Reference :** EAK216610.

**Applicant :** Directed Electronics Inc.

**Test Specification:** ECE Reg 10.3\*  
Annex 7, 8, 9 & 10.

**Date of Receipt:** 2<sup>nd</sup> November 2009.

**Date of Test(s):** 22<sup>nd</sup> Dec 09 to 22<sup>nd</sup> Jan 2010.

**Date of Issue:** 2<sup>nd</sup> March 2010.

**Issue No:** One.

**Conclusion :** The sample tested was found to  
comply with the standards

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law."

"Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only."

*Tests marked:\* are not covered by our UKAS accreditation.*

Signature 

**Test Engineer**

G. Hann

Signature 

**Authorised Signatory**

F. Huggins A. Reynard G. Hann



## CONTENTS

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## 1. Client Information

**Company Name:** Directed Electronics Inc.

**Address:** 1 Viper Way,  
Vista,  
CA. 92081,  
USA.

**Contact Name:** (UK) Carl Huntington

**Telephone:** +(44) 7884 312 279

**Facsimile:** N/A.

## 2. Equipment Under Test (EUT)

### 2.1 Identification of EUT

**Model Number:** Avital 3001L

**Unique Identifier:** 093207064791 [Marked on box]

**Description of EUT:** Vehicle security system with siren 514M,  
door/boot/bonnet/Ign sensors, OEM system  
using vehicle remotes.

**Supply Voltage:** 12 VDC.

**Accessories Supplied:** None.

### **3. Purpose of Tests**

To perform the relevant tests and assess the product for compliance with the above specification.

### **4. Deviations or Exclusions from the Test Specifications**

There were no deviations from the test specifications.

The scope of the inspection is limited to what is specified in the clients instructions and does not include any other checks or tests.

### **5. Operation of the EUT During Testing**

#### **5.1 Configuration and Peripherals**

Peripheral or support equipment was required for the tests. (LEDs were connected for monitoring state changes).

#### **5.2 Operating Mode and Environmental Conditions**

The operating modes and environmental conditions used for each individual test are described in the test results section of this report.

## 6. Test Results

### 1 Test Specification

2004/104/EC: 2004, as amended by 2005/83/EC / 2006/28/EC.  
ECE Reg 10.3.

### 2 Purpose of Test

To perform the relevant tests and assess the product for compliance with the above specification.

### 3 Methods and Procedures.

The following tests are called up by the test specification:-

Standard	Date	Description	Applicable
2004/104/EC ECE Reg 10.3	2004.	Narrowband Emissions.	Yes
2004/104/EC ECE Reg 10.3	2004	Broadband Emissions	Yes
2004/104/EC ECE Reg 10.3	2004	Radiated Immunity	Yes
ISO 7637 – 2 [2004/104/EC Reg 10.3]	2004	Transient conduction along supply lines.	Yes
ISO 7637 – 2 [2004/104/EC Reg 10.3]	2004	Voltage transient emissions	Yes

## Operation of E.U.T. During Testing

### Operating Environment

**Power Supply:**                      **Volts**                      12 – 13.5 DC.

#### Environmental conditions:-

Temperature:	°C	18.5 – 19
Relative Humidity:	%	39 - 48
Barometric Pressure:	mbar	965 - 1009

### Configuration & Peripherals

Peripherals were attached to the EUT during testing. LED,s were connected to monitor state changes.

Photograph of the EUT.





## Summary of Test Results

Standard	Test	Result
----------	------	--------

2004/104/ECE CE Reg 10.3 Annex VIII	Narrowband Emissions	Complied
2004/104/ECE CE Reg 10.3 Annex VII	Broadband Emissions	Complied
2004/104/ECE CE Reg 10.3 Annex IX	Radiated Immunity	Complied
2004/104/ECE CE Reg 10.3 Annex X	Transient Pulses	Complied
2004/104/ECE CE Reg 10.3 Annex X	Transient Emissions	Complied

## Result

In the configuration tested the EUT complied with the specification.

## Test Results

### General Comments

Details of the test methods used can be found in the SGS EMC procedures manual.

### Modifications Made to the EUT.

No modifications were made to the EUT.

## RADIATED EMISSIONS

### OPERATING MODE

Tested in two modes – Armed-set and disarmed ignition on drive mode.

### NARROWBAND & BROADBAND EMISSIONS

Tests were carried out in the vertical and horizontal antenna polarisation, for the above operating mode within an enclosed anechoic chamber.

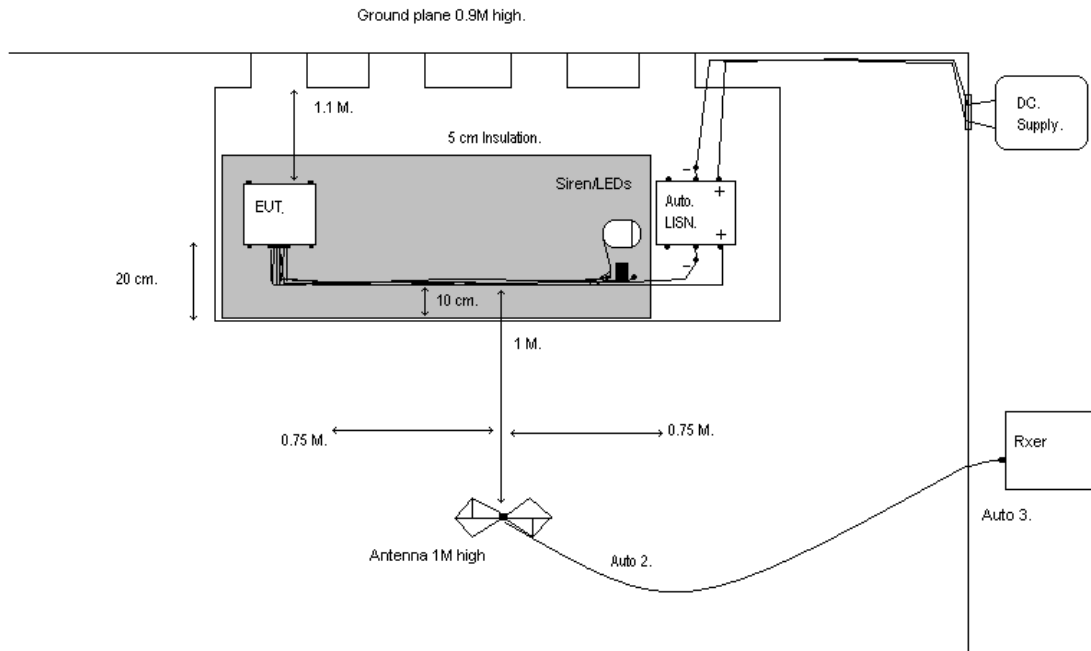
### EQUIPMENT USED.

1. Rohde & Schwarz Rxxr. Ser. No. 825892/019
2. Automotive LISN.
3. Antennas Chase VBA & EMCO 3146.

### PERFORMANCE CRITERIA

All emissions are at least 2 dB below the reference limits for the Vehicle Certification Agency approval.

**Test Configuration Radiated Emissions:**



## VER. POL. SCAN:

22 Dec 2009 08:58

J-FILE 130731/1.

VER. POL. PEAK SCAN.

Avital 3001L.

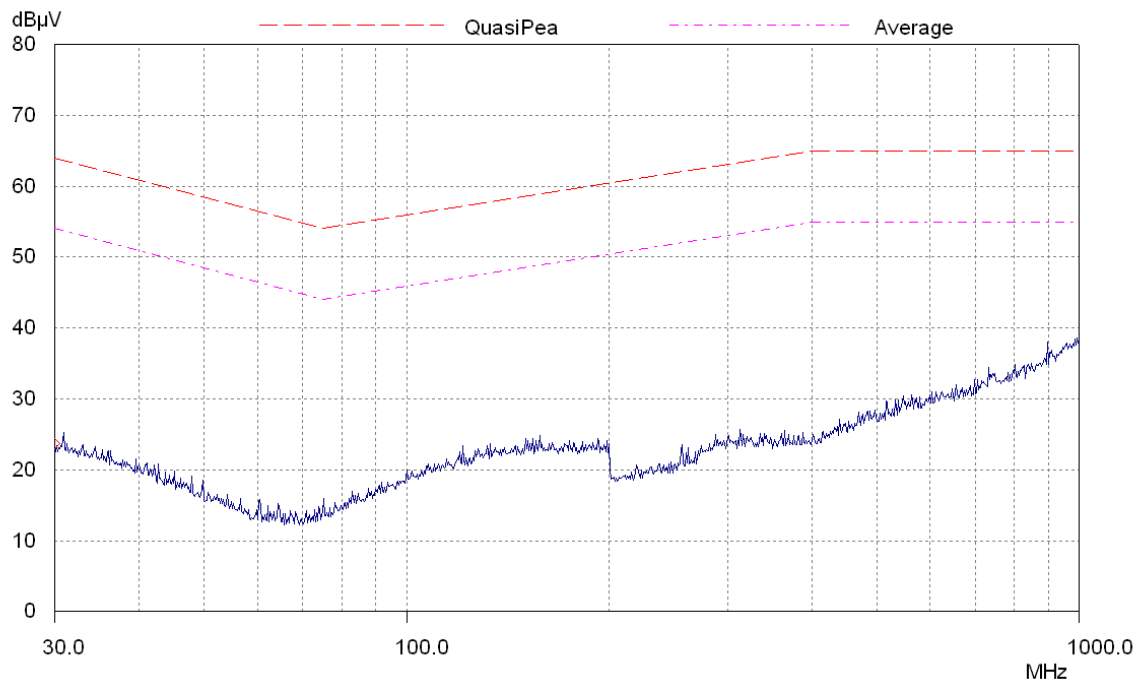
Directed Electronics Inc.

13.5 volts DC supply, disarmed Ign on.

G.H.

Reg 10.3.

Start	Stop Freq	Step	IFBW	Detector	M-Time	Atten	PreAmp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	OFF	60dB



## VER. POL. SCAN:

22 Dec 2009 09:20

J-FILE 130731/1.

VER. POL. PEAK SCAN.

Avital 3001L.

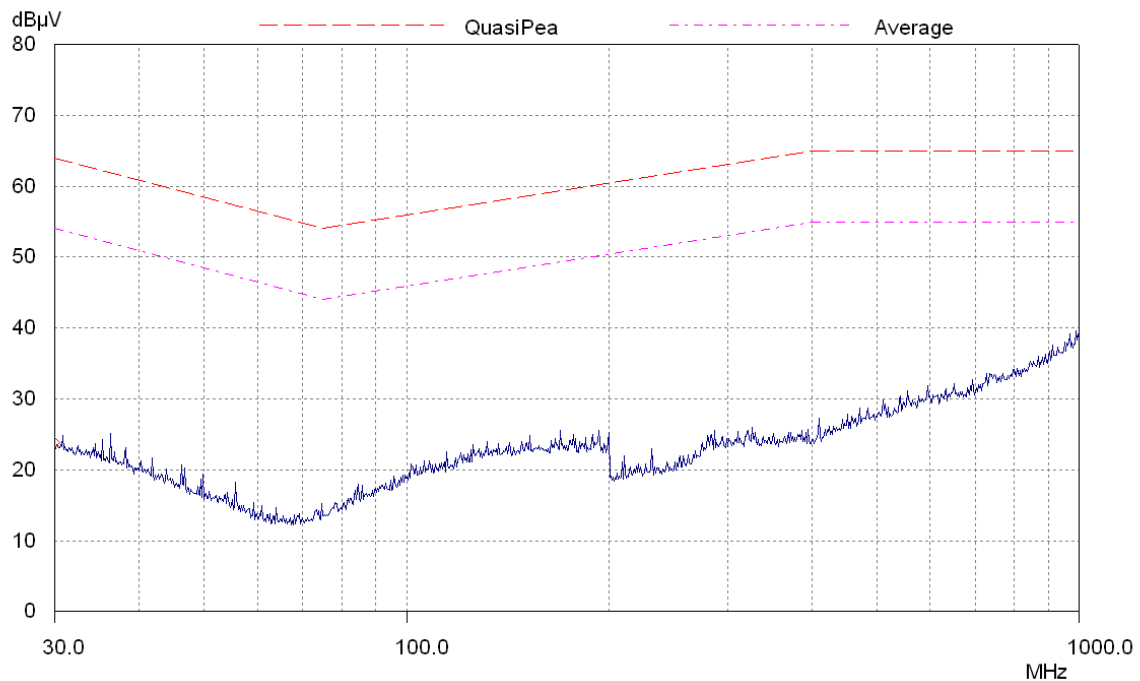
Directed Electronics Inc.

12 volts DC supply, armed mode.

G.H.

Reg 10.3.

Start	Stop Freq	Step	IFBW	Detector	M-Time	Atten	PreAmp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	OFF	60dB



## HOR. POL. SCAN:

22 Dec 2009 09:11

J-FILE 130731/1.

HOR. POL. PEAK SCAN.

Avital 3001L.

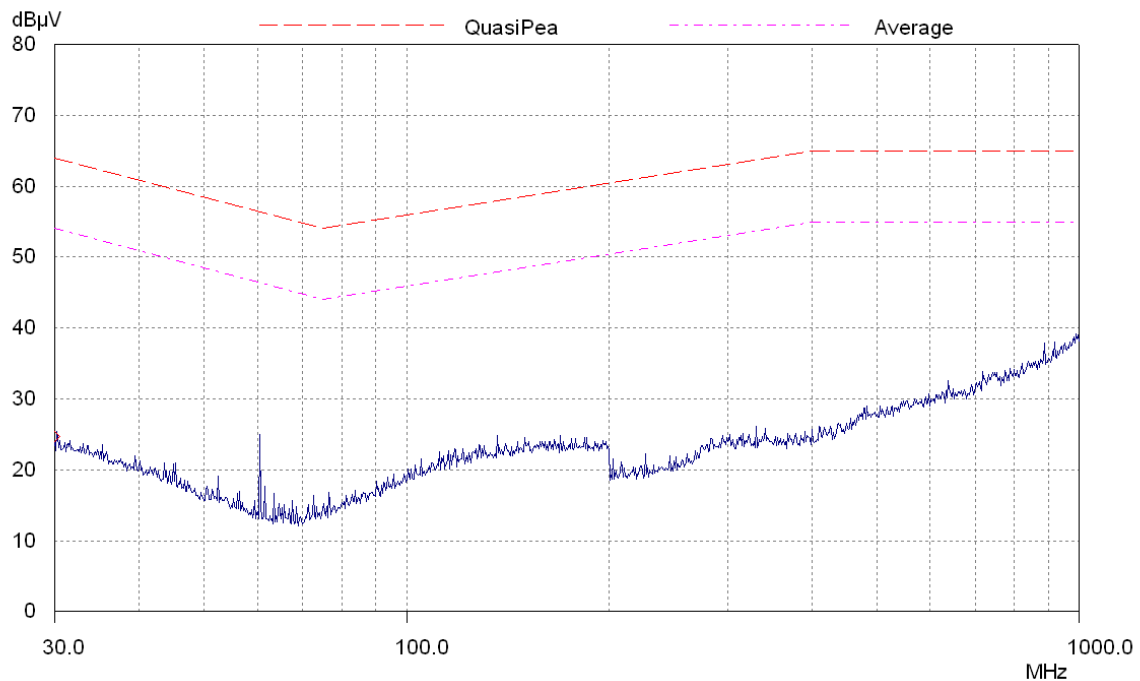
Directed Electronics Inc.

13.5 volts DC supply, disarmed Ign on.

G.H.

Reg 10.3.

Start	Stop Freq	Step	IFBW	Detector	M-Time	Atten	PreAmp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	OFF	60dB



## HOR. POL. SCAN:

22 Dec 2009 09:32

J-FILE 130731/1.

HOR. POL. PEAK SCAN.

Avital 3001L.

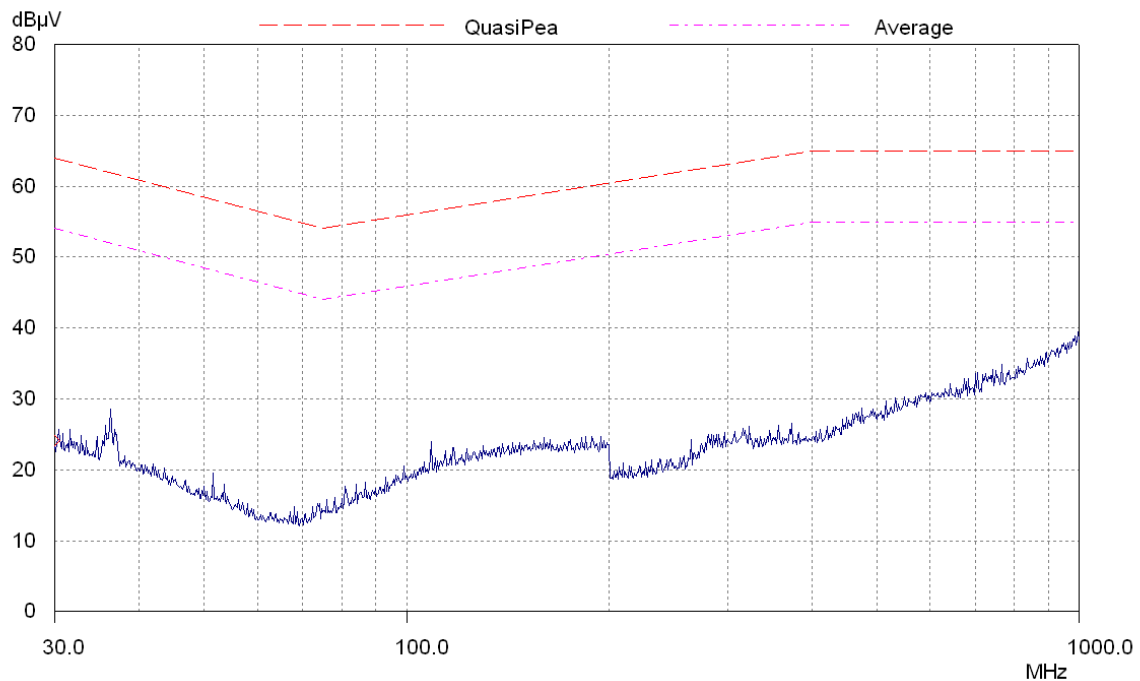
Directed Electronics Inc.

12 volts DC supply, armed mode.

G.H.

Reg 10.3.

Start	Stop Freq	Step	IFBW	Detector	M-Time	Atten	PreAmp	OpRge
30MHz	1000MHz	60kHz	120kHz	PK	2msec	0 dB	OFF	60dB



**RADIATED IMMUNITY****OPERATING MODE**

13.5 VDC supply ignition on drive mode.

**IMMUNITY TESTING**

20 to 2000MHz [30 V/m]

20 to 800MHz with [1 kHz 80% AM] modulation

800 to 2000MHz with [pulsed "t on 577µsec, period 4600 µsec"] modulation

Dwell time: Two seconds.

Tests were carried out in the above operating mode,

NB. In the anechoic chamber the antenna was in the vertical / horizontal polarisation.

**EQUIPMENT USED.**

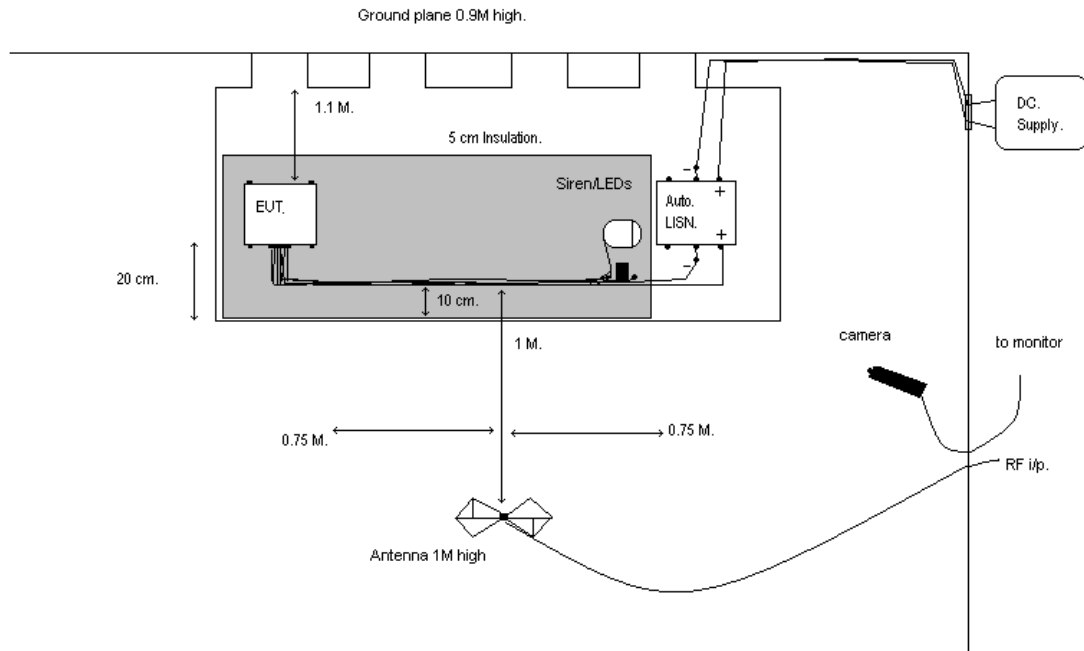
Amplifier	250L
Amplifier	500W1000A
Amplifier	200T1G3A
Signal generator	2024
Isotropic field monitor	FM Radi-Sense RI-37
Probe	FP 04 RI-37
Power Meter	NVRS
Functional Generator	TG 1010
Spectrum Analyser	HP8563E
Auto LISN	NNBM

**PERFORMANCE CRITERIA**

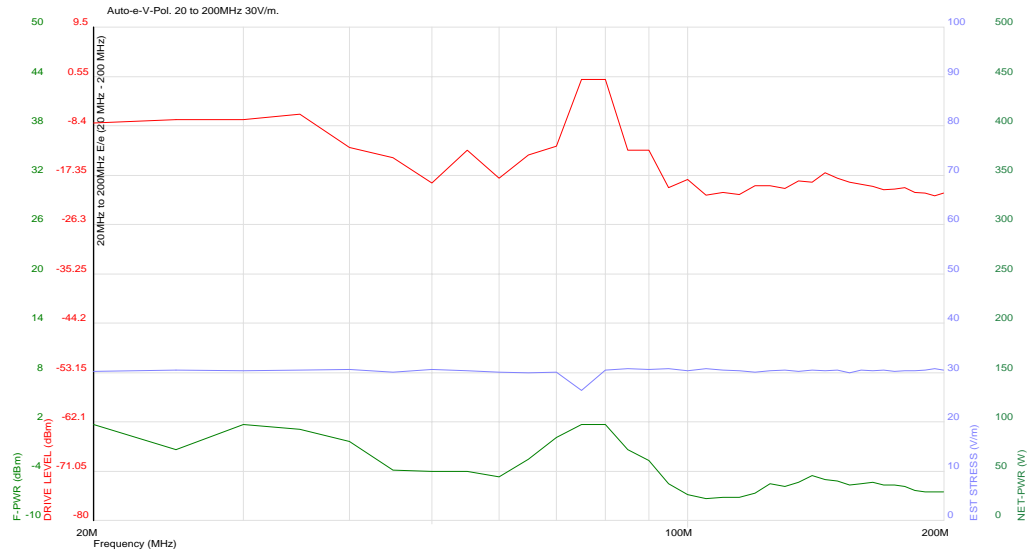
The EUT shall not exhibit any malfunction which will cause any degradation of performance which could cause confusion to other road users or any degradation in the driver's direct control of a vehicle fitted with the system which could be observed by the driver or other road user.



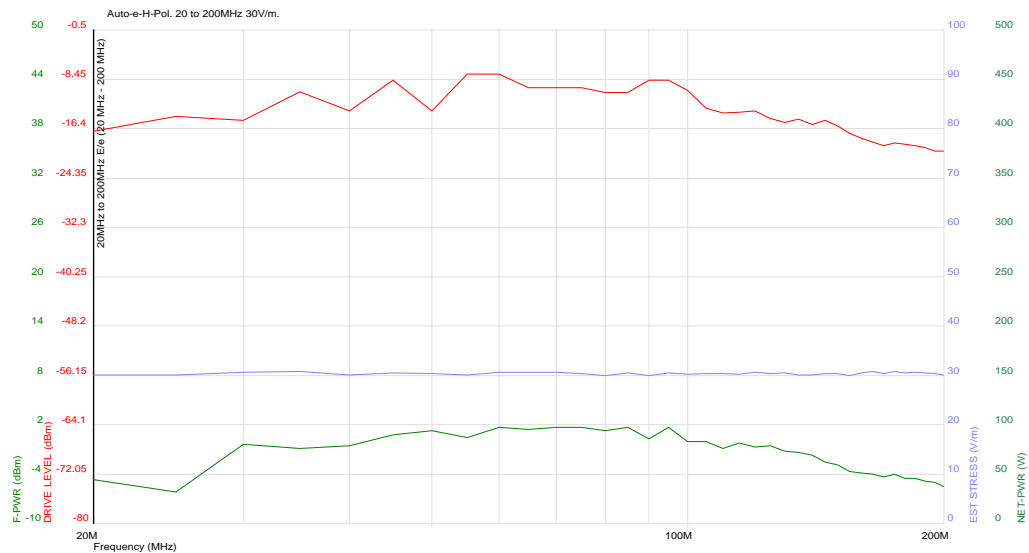
**Test Configuration Radiated Immunity:**



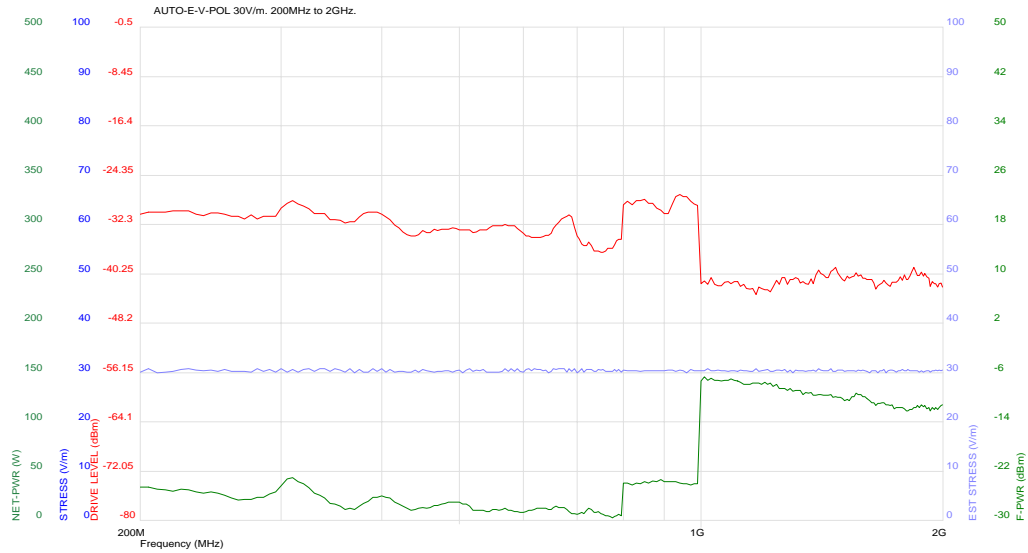
## 20 to 200 MHz V-Pol.



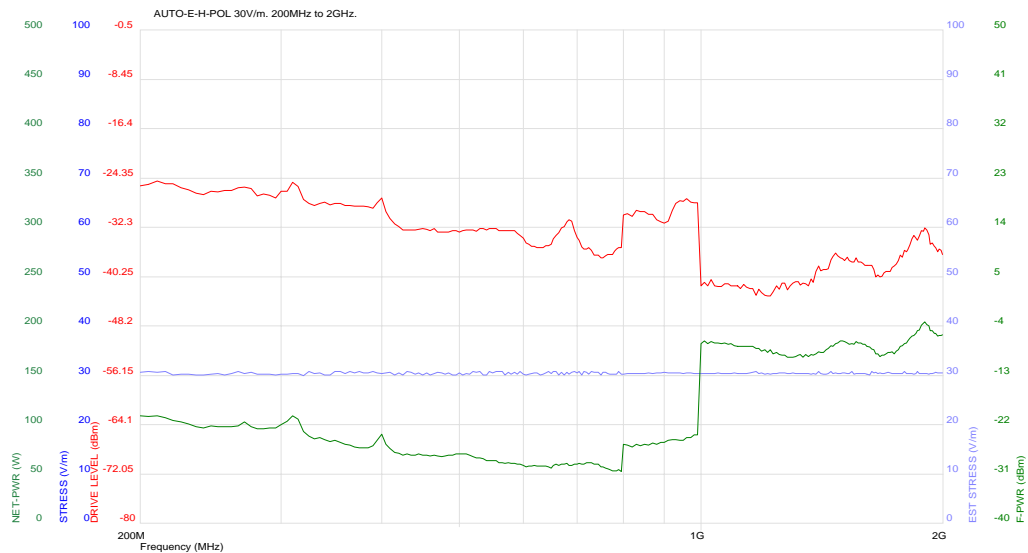
## 20 to 200 MHz H-Pol.



## 200 to 2000 MHz V-Pol.



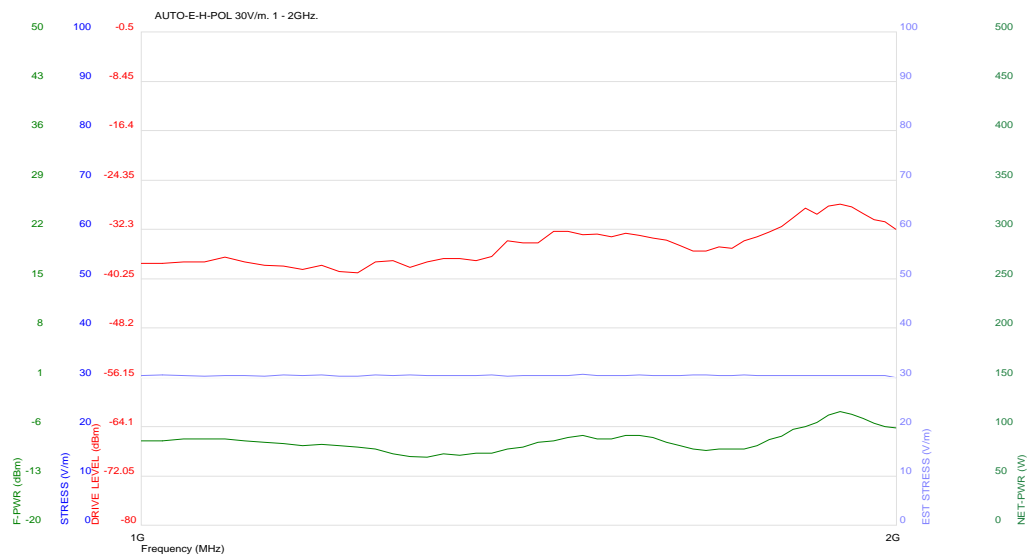
## 200 to 2000 MHz H-Pol.



## 1000 to 2000 MHz V-Pol.



## 1000 to 2000 MHz H-Pol



## Transient Immunity

### OPERATING MODE

Ignition on drive mode.

### Immunity Pulses 12 volt systems

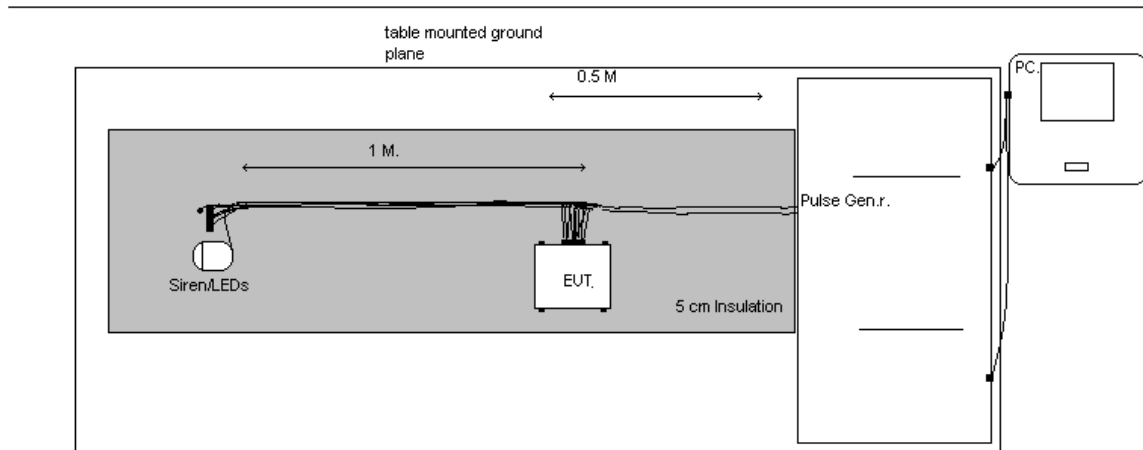
Pulse Number.	Test Level	Number of pulse / time.	Pass / Fail
1.	-75V	5000	B
2a	+37V	5000	A
2b	+10V	10	B
3a	-112V	1 hour	A
3b	+75V	1 hour	A
4	-6V	1 pulse	A

### EQUIPMENT USED.

Pulse generators: NSG 5500, MT 5511, FT 5530, LD 5505, NSG 5004, NSG 5201, INA 5002, INA 5025, INA 5026, DCS 5230, ARB 5220, CTR 5210.

Oscilloscope – Agilent: 54810A

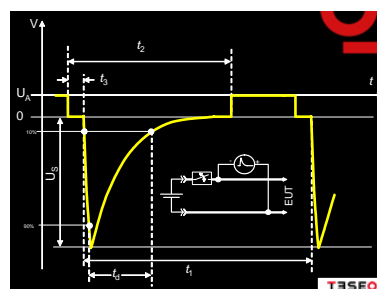
**Test Configuration Transient Immunity:**



<b>Test Report</b>		AUT: 130731/1.
Date: 01-14-2010	Time: 12:38:06	
Company Name :	Directed Electronics Inc.	
Equipment Tested :	Avital 3001L.	
Serial Number :	Not marked.	
Test Equipment used :	TESEQ Generators	
Test Procedure Used :	ISO 7637 - 2.	
<b>Test Number 1</b>		

Test Name 12vp1.  
 Test Type MT 5511 Pulse 1  
 Sequence Repetition Count 5000

Test Status PASS. B.



Parameter	Operation	From	To	Step Size	Fail Value
Pulse Voltage (Us)	Static	75 V	---	---	---
Pulse Period (t1)	Static	0.5 s	---	---	---
<b>General</b>		<b>Value</b>			
Rise Time (tr)		1 us			
Output Resistance (Ri)		10 ohms			
Pulse Width (td)		2 ms			
t2		200 ms			
Polarity/Coupling		Negative Parallel			
<b>Battery</b>					
Battery State		UPC/Time			
Voltage		13.5 V			
Current Limit		12.5 A			
End of Test Voltage		13.5 V			

## Comments

During the test the Supply – flickered on/off, then returned to normal on completion of the test.

## General Conditions

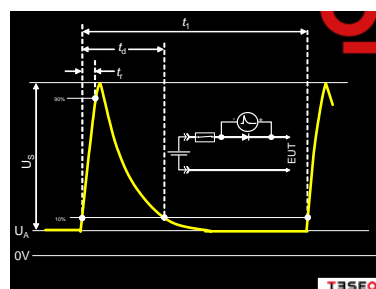
Ambient Temperature : 19 Humidity : 48 Pressure : 986  
 Tested by : G. Hann.  
 Signature :

<b>Test Report</b>		AUT: 130731/1.
Date: 01-14-2010	Time: 13:34:51	
Company Name :	Directed Electronics Inc.	
Equipment Tested :	Avital 3001L.	
Serial Number :	Not marked.	
Test Equipment used :	TESEQ Generators	
Test Procedure Used :	ISO 7637 - 2.	

## Test Number 1

Test Name 12vp2a.  
 Test Type MT 5511 Pulse 2  
 Sequence Repetition Count 5000

Test Status PASS. A.



Parameter	Operation	From	To	Step Size	Fail Value
Pulse Voltage (Us)	Static	37 V	---	---	---
Pulse Period (t1)	Static	0.2 s	---	---	---

General	Value
Rise Time (tr)	1 us
Output Resistance (Ri)	2 ohms
Pulse Width (td)	50 us
t2	Not Applicable
Polarity/Coupling	Positive Serial

Battery	
Battery State	On
Voltage	13.5 V
Current Limit	12.5 A
End of Test Voltage	13.5 V

Ext. Resistance (Ri)	
External Resistance	Inactive

## Comments

No changes recorded.

## General Conditions

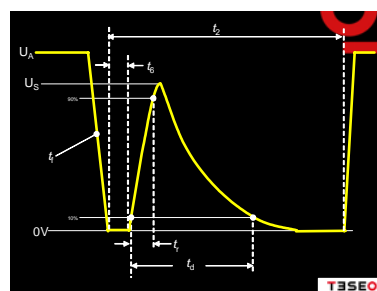
Ambient Temperature : 19 Humidity : 48 Pressure : 986  
 Tested by : G. Hann.  
 Signature :



<b>Test Report</b>		AUT: 130731/1.
Date: 01-14-2010	Time: 13:47:46	
Company Name :	Directed Electronics Inc.	
Equipment Tested :	Avital 3001L.	
Serial Number :	Not marked.	
Test Equipment used :	TESEQ Generators	
Test Procedure Used :	ISO 7637 - 2.	
<b>Test Number 1</b>		

Test Name 12vp2b.  
Test Type NSG 5200 Pulse 2B  
Sequence Repetition Count 10

Test Status PASS. B.



## Voltage

Ua 12 V  
Us 10 V

## Timing

tf 1 ms  
t6 1 ms  
tr 1 ms  
td 50 ms  
t2 0.5 s  
t1 2 s

## Resistance

Resistance 0 ohms

## Battery

Current Limit 12 A  
End of Test Voltage 13.5 V

## Comments

The supply flickered off/on with each pulse applied.

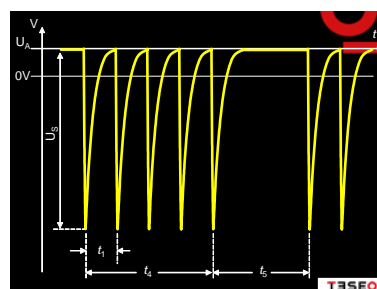
## General Conditions

Ambient Temperature : 19 Humidity : 48 Pressure : 986  
Tested by : G. Hann.  
Signature :

<b>Test Report</b>		AUT: 130731/1.
<b>Date:</b> 01-14-2010	<b>Time:</b> 14:53:05	
<b>Company Name :</b>	Directed Electronics Inc.	
<b>Equipment Tested :</b>	Avital 3001L.	
<b>Serial Number :</b>	Not marked.	
<b>Test Equipment used :</b>	TESEQ Generators	
<b>Test Procedure Used :</b>	ISO 7637 - 2.	
<b>Test Number 1</b>		

Test Name 12vp3a.  
 Test Type FT 5530 Pulse 3A  
 Sequence Repetition Hours 1

Test Status PASS. A.

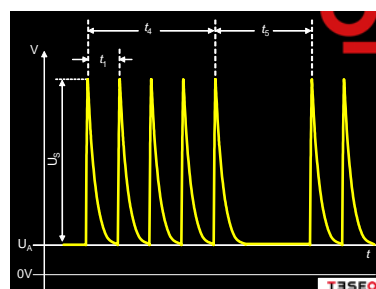


Parameter	Operation	From	To	Step Size	Fail Value
Pulse Voltage (Us)	Static	112 V	---	---	---
Pulse Freq (1/t1)	Static	10 kHz	---	---	---
<b>General</b>		<b>Value</b>			
Rise Time (tr)		5 ns			
Output Resistance (Ri)		50 ohms			
Pulse Width (td)		100 ns			
Burst Interval(t5)		0.09 s			
Output Mode		NORMAL			
<b>No Pulses (t4/t1)</b>					
Burst Duration (t4)		10 ms			
<b>Battery</b>					
Battery State		On			
Voltage		12 V			
Current Limit		12 A			
End of Test Voltage		12 V			
<b>Polarity</b>					
Polarity		Negative			
<b>Comments</b>					
		No changes recorded.			
<b>General Conditions</b>					
Ambient Temperature :	19	Humidity :	48	Pressure :	986
Tested by :	G. Hann.				
Signature :					

<b>Test Report</b>		AUT: 130731/1.
<b>Date:</b> 01-14-2010	<b>Time:</b> 16:01:39	
<b>Company Name :</b>	Directed Electronics Inc.	
<b>Equipment Tested :</b>	Avital 3001L.	
<b>Serial Number :</b>	Not marked.	
<b>Test Equipment used :</b>	TESEQ Generators	
<b>Test Procedure Used :</b>	ISO 7637 - 2.	
<b>Test Number 1</b>		

Test Name 12vp3b.  
 Test Type FT 5530 Pulse 3B  
 Sequence Repetition Hours 1

Test Status PASS. A.

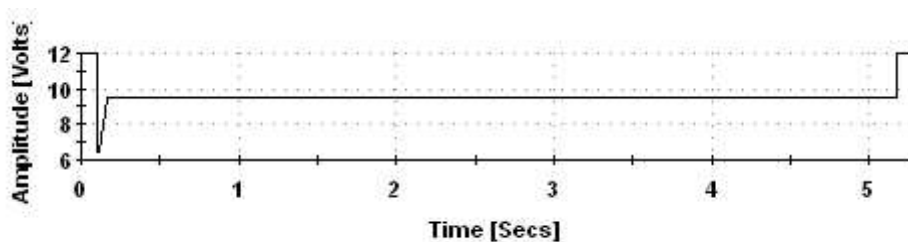


Parameter	Operation	From	To	Step Size	Fail Value
Pulse Voltage (Us)	Static	75 V	---	---	---
Pulse Freq (1/t1)	Static	10 kHz	---	---	---
<b>General</b>		<b>Value</b>			
Rise Time (tr)		5 ns			
Output Resistance (Ri)		50 ohms			
Pulse Width (td)		100 ns			
Burst Interval(t5)		0.09 s			
Output Mode		NORMAL			
<b>No Pulses (t4/t1)</b>					
Burst Duration (t4)		10 ms			
<b>Battery</b>					
Battery State		On			
Voltage		13.5 V			
Current Limit		12 A			
End of Test Voltage		13.5 V			
<b>Polarity</b>					
Polarity		Positive			
<b>Comments</b>					
No changes recorded.					
<b>General Conditions</b>					
Ambient Temperature :	19	Humidity :	48	Pressure :	986
Tested by :	G. Hann.				
Signature :					

<b>Test Report</b>		AUT: 130731/1.
Date: 01-14-2010	Time: 16:19:22	
Company Name :	Directed Electronics Inc.	
Equipment Tested :	Avital 3001L.	
Serial Number :	Not marked.	
Test Equipment used :	TESEQ Generators	
Test Procedure Used :	ISO 7637 - 2.	

## Test Number 1

Test Name 12vp4.  
 Test Type Pulse 4  
 Sequence Repetition Count 1  
 Test Status PASS. A.



Segment Number # 1	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Static	12 Vpp	---
Parameter	Value		
Segment Duration	100 ms		
Segment Number # 2	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Linear	12 Vpp	6 Vpp
Parameter	Value		
Segment Duration	5 ms		
Segment Number # 3	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Static	6 Vpp	---
Parameter	Value		
Segment Duration	15 ms		
Segment Number # 4	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Linear	6 Vpp	8 Vpp
Parameter	Value		

Segment Duration	50 ms		
Segment Number # 5	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Static	8 Vpp	- - -
Parameter	Value		
Segment Duration	5 Seconds		
Segment Number # 6	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Linear	8 Vpp	12 Vpp
Parameter	Value		
Segment Duration	5 ms		
Segment Number # 7	RAMP		
Parameter	Mode	Initial Value	Final Value
Amplitude	Static	12 Vpp	- - -
Parameter	Value		
Segment Duration	100 ms		
Battery:		End of Test:	
Current Limit:	12.5 A	Voltage:	12 V

## Comments

No changes recorded.

## General Conditions

Ambient Temperature : 19 Humidity : 48 Pressure : 986

Tested by : G. Hann.

Signature :

**Transient Emissions****OPERATING MODE**

Ignition on – disarmed.

**Emissions Pulse maximum amplitude 12 volt systems**

Pulse polarity.	Maximum Level	Pass / Fail
Positive	+75V	Pass
Negative	-100V	Pass

**EQUIPMENT USED.**

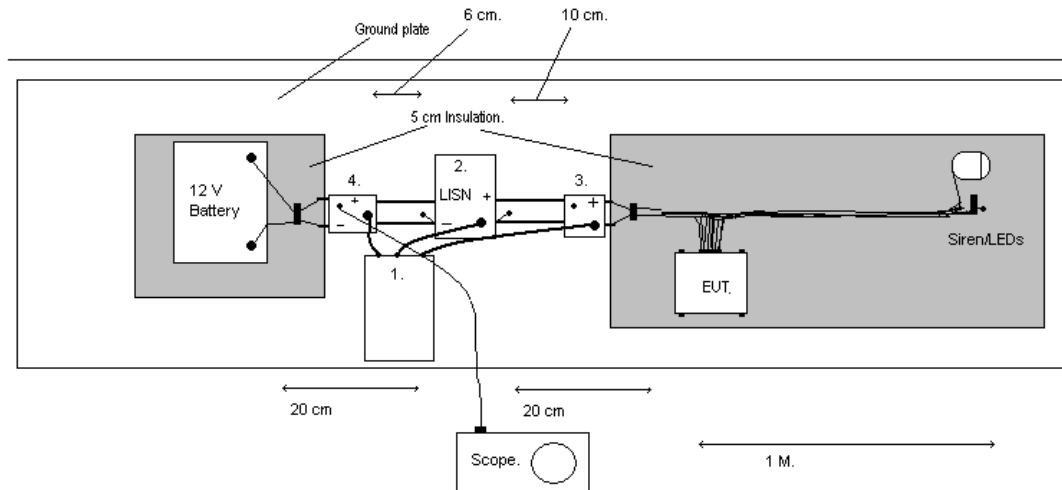
TESEQ: AES 5501 Automotive emissions system.

1 – SC 5501 “Control”	(85-264-VAC)	S/No. 1013.
2 – AN 5501 “LISN”	(1000008)	S/No. 1013.
3 – ES 5501 “Electronic switch”	(202-150)	S/No. 1013.
4 – MS 5501 “Mechanical switch”	(202-160)	S/No. 1013.

Scope – Agilent 54810A.

S/No. US40110227.

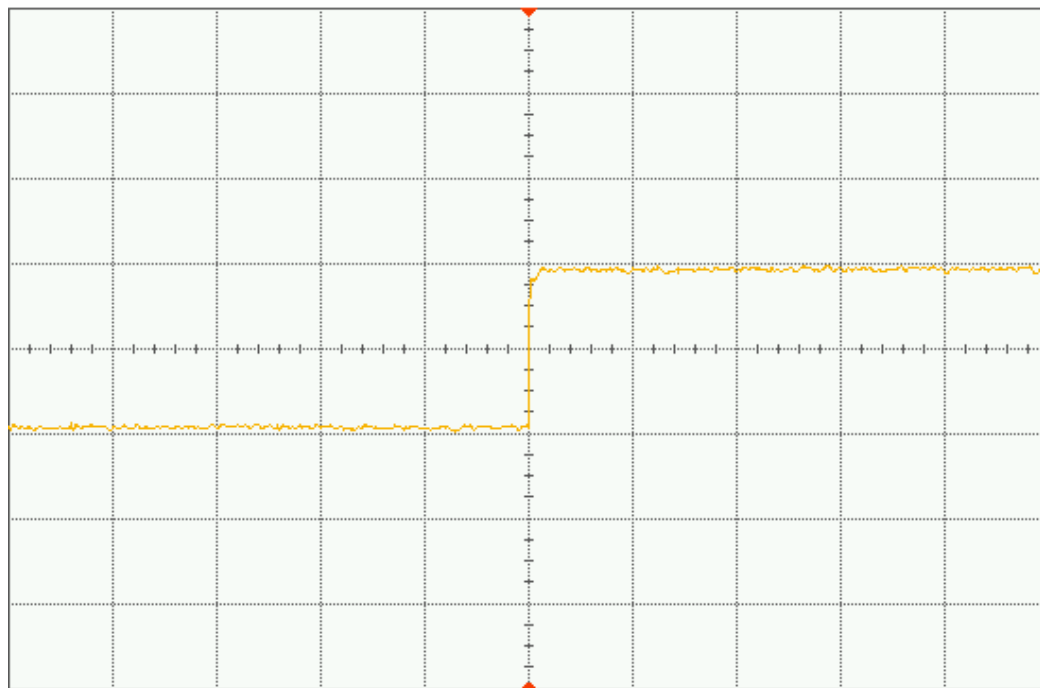
## Test Configuration Transient Emission:



- 1. SC5501 - Controller.
- 2. AN5501 - LISN.
- 3. ES5501 - Electronic Switch.
- 4. MS5501 - Mechanical Switch.

## 12V Switching on.

Saved: 22 JAN 2010 14:47:21



Acquisition      Sampling mode real time  
                      Memory depth automatic Memory depth 1004pts  
                      Sampling rate automatic Sampling rate 10.0 kSa/s  
                      Averaging off  
                      9-bit BW Filter off Interpolation on

Channel 1        Scale 50 mV/div Offset 58.0 mV  
                      BW limit off Coupling DC Impedance 1M Ohm  
                      Attenuation 1.000 : 1 Atten units ratio Skew 0.0 s  
                      Ext adaptor None  
                      Ext gain 1.00 V Ext offset 0.0 V

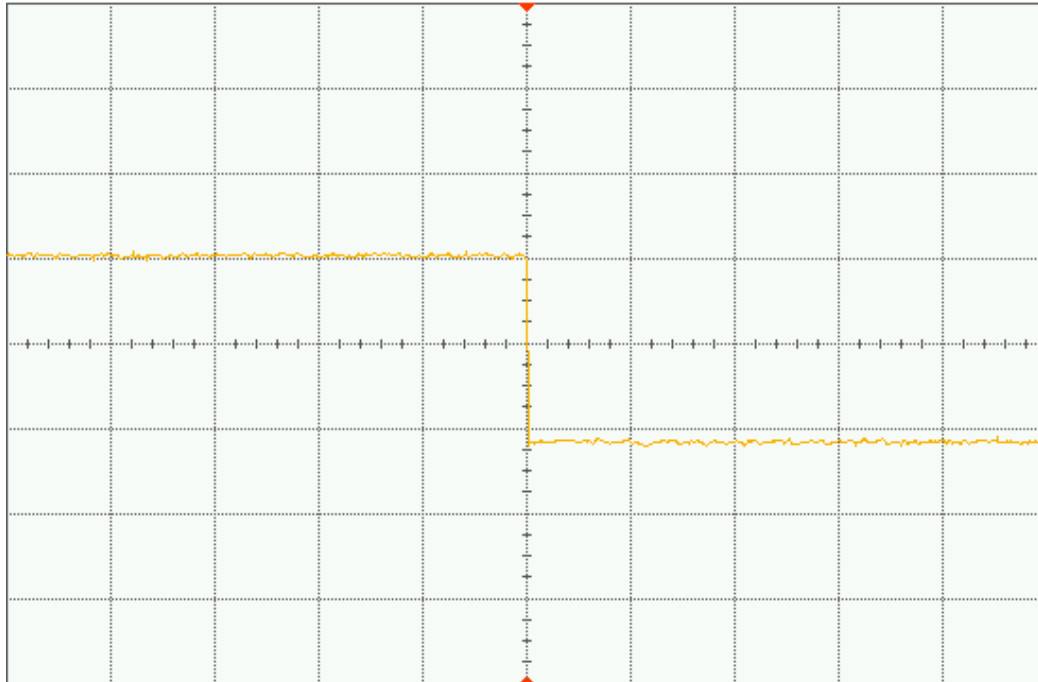
Time base        Scale 10.0 ms/div Position 0.0 s Reference center

Trigger           Mode edge Sweep triggered  
                      Hysteresis normal Holdoff time 60 ns Coupling DC  
                      Source channel 1 Trigger level 58.0 mV Slope rising



## 12V Switching off.

Saved: 22 JAN 2010 14:52:55



Acquisition      Sampling mode real time  
Memory depth automatic Memory depth 1004pts  
Sampling rate automatic Sampling rate 10.0 kSa/s  
Averaging off  
9-bit BW Filter off Interpolation on

Channel 1        Scale 50 mV/div Offset 58.0 mV  
BW limit off Coupling DC Impedance 1M Ohm  
Attenuation 1.000 : 1 Atten units ratio Skew 0.0 s  
Ext adaptor None  
Ext gain 1.00 V Ext offset 0.0 V

Time base        Scale 10.0 ms/div Position 0.0 s Reference center

Trigger           Mode edge Sweep triggered  
Hysteresis normal Holdoff time 60 ns Coupling DC  
Source channel 1 Trigger level 58.0 mV Slope falling



# TEST REPORT

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Issue Date: 2<sup>nd</sup> March 2010.

SGS Serial Number:

AUT130731/4/GH/10.

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**Last Page of Report**

